# **SERVICE MANUAL**

Ver 1.0 2002. 03
Revision History



Photo: DCR-TRV740E

DCR-TRV740E E Model DCR-TRV740/TRV740E/TRV840

Korea Model

Russian Model

US Model

AEP Model

DCR-TRV738E/TRV740E Australian Model

Canadian Model

Hong Kong Model Chinese Model

East European Model North European Model

Tourist Model

DCR-TRV740/TRV740E

Argentina Model

DCR-TRV840

M2000 MECHANISM

Link		
• SPECIFICATIONS	BLOCK DIAGRAMS	• PRINTED WIRING BOARDS
• SERVICE NOTE	FRAME SCHEMATIC DIAGRAMS	<ul><li>ADJUSTMENTS</li></ul>
• DISASSEMBLY	<ul> <li>SCHEMATIC DIAGRAMS</li> </ul>	• REPAIR PARTS LIST

#### On the VC-278 board

This service manual provides the information that is premised the circuit board replacement service and not intended repair inside the VC-278 board.

Therefore, schematic diagram, printed wiring board, waveforms, mounted parts location and electrical parts list of the VC-278 board are not shown.

The following pages are not shown.



















#### **SPECIFICATIONS**

#### Video camera recorder

#### System

Video recording system

2 rotary heads

Helical scanning system

Audio recording system

Rotary heads, PCM system Quantization: 12 bits (Fs 32 kHz, stereo 1, stereo 2), 16 bits (Fs 48 kHz, stereo)

Video signal

DCR-TRV740/TRV840: NTSC color, EIA standards DCR-TRV738E/TRV740E:

PAL colour, CCIR standards

**Recommended cassette** 

Hi8/Digital8 video cassette Recording/playback time DCR-TRV740/TRV840:

(using 120 min. Hi8 video cassette) DCR-TRV738E/TRV740E:

(using 90 min. Hi8 video cassette)

SP mode: 1 hour

LP mode: 1 hour and 30 minutes

Fast-forward/rewind time DCR-TRV740/TRV840:

(using 120 min. Hi8 video cassette) DCR-TRV738E/TRV740E:

(using 90 min. Hi8 video cassette)

Approx. 5 min.

Viewfinder

Electric Viewfinder, Monochrome

Image device

DCR-TRV740/TRV840: 4.5 mm (1/4 type) CCD (Charge Coupled Device) Gross: Approx. 1 070 000 pixels Effective: Approx. 690 000 pixels

(Camera mode) Approx. 1 000 000 pixels

(Memory mode) DCR-TRV738E:

3.8 mm (1/4.7 type) CCD (Charge Coupled Device) Gross: Approx. 1 070 000 pixels Effective: Approx. 690 000 pixels

(Camera mode) Approx. 1 000 000 pixels (Memory mode)

DCR-TRV740E:

3.8 mm (1/4.7 type) CCD (Charge Coupled Device) Gross: Approx. 1 070 000 pixels

Effective (still):
Approx. 1 000 000 pixels

Effective (moving): Approx. 690 000 pixels

Lens Combined power zoom lens

Filter diameter 37 mm (1 1/2 in.) 15× (Optical), 420× (Digital)

Focal length

3.6 - 54 mm (5/32 - 21/4 in.) When converted to a 35 mm still camera

Camera mode:

48 - 720 mm (1 15/16 - 28 3/8 in.)

Memory mode:

40 - 600 mm (1 5/8 - 23 5/8 in.)

Color temperature

Auto

Minimum illumination

7 lx (lux) (F1.6)

0 lx (lux) (in the NightShot mode)\* Objects unable to be seen due to the dark can be shot with infrared lighting.

#### Input/output connectors

DCR-TRV738E:

S video output

DCR-TRV740/TRV740E/TRV840:

S video input/output

4-pin mini DIN

Luminance signal: 1 Vp-p, 75 Ω (ohms), unbalanced DCR-TRV740/TRV840:

Chrominance signal: 0.286 Vp-p, 75  $\Omega$  (ohms), unbalanced

DCR-TRV738E/TRV740E: Chrominance signal: 0.3 Vp-p, 75  $\Omega$  (ohms), unbalanced

DCR-TRV738E: Audio/Video output

DCR-TRV740/TRV740E/TRV840:

Audio/Video input/output

AV MINIJACK, 1 Vp-p, 75 Ω (ohms), unbalanced, sync negative 327 mV, (at output impedance more than 47 k $\Omega$  (kilohms)) Output impedance with less than

 $2.2 \text{ k}\Omega$  (kilohms)/Stereo minijack (ø 3.5 mm)

DCR-TRV740/TRV740E/TRV840: Input impedance more than 47  $k\Omega$ (kilohms)

Headphone jack

Stereo minijack (ø 3.5 mm)

USB jack mini-B

LANC jack

Stereo mini-minijack (ø 2.5 mm)

MIC jack

Stereo minijack (ø 3.5 mm)

DCR-TRV738E:

DV output

DCR-TRV740/TRV740E/TRV840:

DV input/output

4-pin connector

#### LCD screen

**Picture** 

DCR-TRV738E/TRV740/TRV740E: 6.2 cm (2.5 type)

 $50.3 \times 37.4 \text{ mm} (2 \times 11/2 \text{ in.})$ DCR-TRV840:

8.8 cm (3.5 type)  $72.2 \times 50.4$  mm  $(27/8 \times 2 in.)$ 

Total dot number

For NTSC models and European models:

 $123\ 200\ (560 \times 220)$ For other countries models of DCR-TRV740E:

61 600 (280 × 220)

#### General

**Power requirements** 

7.2 V (battery pack)

8.4 V (AC power adaptor)

Average power consumption (when using the battery pack)

During camera recording using LCD

DCR-TRV738E:

3.4 W

DCR-TRV740: 4.3 W

DCR-TRV740E:

4.2 W

DCR-TRV840:

4.5 W Viewfinder

DCR-TRV740/TRV840:

3.5 W DCR-TRV738E/TRV740E:

3.4 W Operating temperature

0°C to 40°C (32°F to 104°F)

Recommended charging temperature

10°C to 30°C (50°F to 86°F)

Storage temperature  $-20^{\circ}$ C to +  $60^{\circ}$ C ( $-4^{\circ}$ F to +  $140^{\circ}$ F)

Dimensions (approx.)

 $207 \times 101 \times 85 \text{ mm}$ 

 $(81/4 \times 4 \times 33/8 \text{ in.})$ Mass (approx.)

DCR-TRV738E/TRV740/TRV740E:

900 g (1 lb 15 oz)

DCR-TRV840:

930 g (2 lb) excluding the battery pack,

cassette, lens cap and shoulder

DCR-TRV738E/TRV740/TRV740E:

 $1\ 040\ g\ (2\ lb\ 4\ oz)$ 

DCR-TRV840:

1 070 g (2 lb 5 oz) including the battery pack (NP-FM50), 120min. Hi8 cassette

(DCR-TRV740/TRV840), 90min.

Hi8 cassette (DCR-TRV738E/TRV740E), lens cap and shoulder strap

Supplied accessories

See page 4.

#### **AC** power adaptor

**Power requirements** 

100 - 240 V AC, 50/60 Hz **Power consumption** 

23 W

Output voltage DC OUT: 8.4 V, 1.5 A in the

operating mode Operating temperature

0°C to 40°C (32°F to 104°F) Storage temperature

 $-20^{\circ}$ C to +  $60^{\circ}$ C ( $-4^{\circ}$ F to +  $140^{\circ}$ F)

 $(5 \times 19/16 \times 21/2 \text{ in.}) (w/h/d)$ 

Dimensions (approx.)

 $125 \times 39 \times 62 \text{ mm}$ 

excluding projecting parts Mass (approx.)

excluding power cord

#### **Battery pack**

Maximum output voltage

Mean output voltage

DC 7.2 V

Capacity

8.5 wh (1 180 mAh) Operating temperature

0°C to 40°C (32°F to 104°F)

Dimensions (approx.)

 $38.2 \times 20.5 \times 55.6 \text{ mm}$  $(1.9/16 \times 13/16 \times 2.1/4 \text{ in.})$ 

(w/h/d)

Mass (approx.) 76 g (2.7 oz)

Type Lithium ion

#### "Memory Stick"

Memory

Flash memory

8MB: MSA-8A Operating voltage

2.7 - 3.6 V

Power consumption Approx. 45 mA in the operating

Approx. 130 μA in the standby mode

Dimensions (approx.)

 $50 \times 2.8 \times 21.5 \text{ mm}$ 

 $(2 \times 1/8 \times 7/8 \text{ in.}) (w/h/d)$ Mass (approx.)

4 g (0.14 oz)

Design and specifications are subject to change without notice.

#### **SAFETY-RELATED COMPONENT WARNING!!**

COMPONENTS IDENTIFIED BY MARK A OR DOTTED LINE WITH MARK A ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

#### **CAUTION:**

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type.

#### ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFÉS PAR UNE MARQUE A SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈSES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPÉMENTS PUBLIÉS PAR SONY.

#### SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer.

- Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
- Check the interboard wiring to ensure that no wires are 2. "pinched" or contact high-wattage resistors.
- Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
- Look for parts which, through functioning, show obvious signs 4. of deterioration. Point them out to the customer and recommend their replacement.
- Check the B+ voltage to see it is at the values specified.
- Flexible Circuit Board Repairing
  - Keep the temperature of the soldering iron around 270°C during repairing.
  - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
  - Be careful not to apply force on the conductor when soldering or unsoldering.

#### **Unleaded solder**

Boards requiring use of unleaded solder are printed with the leadfree mark (LF) indicating the solder contains no lead.

(Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size.)

## : LEAD FREE MARK

Unleaded solder has the following characteristics.

• Unleaded solder melts at a temperature about 40°C higher than ordinary solder.

Ordinary soldering irons can be used but the iron tip has to be applied to the solder joint for a slightly longer time.

Soldering irons using a temperature regulator should be set to about 350°C.

Caution: The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful!

Strong viscosity

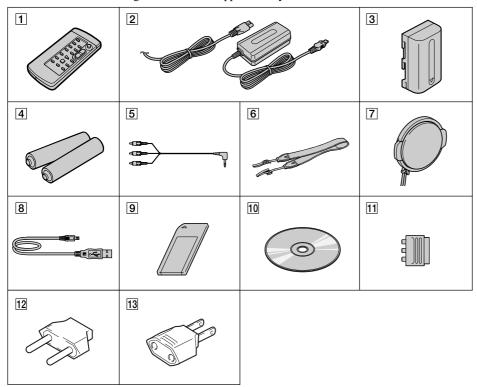
Unleaded solder is more viscous (sticky, less prone to flow) than ordinary solder so use caution not to let solder bridges occur such as on IC pins, etc.

Usable with ordinary solder

It is best to use only unleaded solder but unleaded solder may also be added to ordinary solder.

#### • SUPPLIED ACCESSORIES

Make sure that the following accessories are supplied with your camcorder.



- **1** Wireless Remote Commander (1)
- 2 AC-L10A/L10B/L10C AC power adaptor (1), Power cord (1)
- 3 NP-FM50 battery pack (1)
- 4 Size AA (R6) battery for Remote Commander (2)
- **5** A/V connecting cable (1.5m)(1)
- **6** Shoulder strap (1)
- **7** Lens cap (1)
- **8 USB** cable (1)

- 9 "Memory Stick" (1)
- 10 CD-ROM (USB Driver) (1) SPVD (I): US, CND models SPVD: For other models
- **21-pin adaptor**(1) For European models only
- [12] 2-pin conversion adaptor (1) DCR-TRV740: JE model / DCR-TRV740E: JE model only
- 13 2-pin conversion adaptor (1) DCR-TRV740: E/ TRV740E: E, HK models only

#### **Table for difference of function**

Model		DCR-TRV738E	DCR-TRV740	DCR-TRV740E		DCR-TRV840	Remark
Destination		AEP	US, CND, E,	AEP, EE, NE,	E, AUS, HK,	US, CND, E,	
			KR, JE	RU	ЈЕ, СН	AR	
Color System		PAL	NTSC	PA	AL	NTSC	
	size		2.5	inch	3.5 inch		
	pixel	123k	61k	123κ	61k	123k	
LCD	type	SH	SO	SH	SO	SO or CA	type SH and CA: with PD-156 board type SO: with PD-160 board
VTR RE	EC	×	O				O: with REC button

• Abbreviation

AR

CND: Canadian model
KR: Korea model
JE: Tourist model
AUS: Australian model
HK: Hong Kong model
CH: Chinese model
EE: East European model
NE: North European model
RU: Russian model

: Argentina model

• The DCR-TRV740E uses two types of 2.5 inch LCD. For identification of the 2.5 inch LCD, see "SECTION 5. 1-5-1. LCD Type Check".

• The DCR-TRV840 uses two types of the type SO or type CA LCD. For identification of the type SO or type CA LCD, see "SECTION 5. 1-5-1. LCD Type Check".

#### TABLE OF CONTENTS

1.	SERVICE NOTE		• CONTROL SWITCH BLOCK (CF-2500)	
1-1.	SERVICE NOTE ·····1-1		SCHEMATIC DIAGRAM	··· 4-11
1.	POWER SUPPLY DURING REPAIRS1-1		• PD-156 (1/2)(LCD DRIVER, BACKLIGHT)	
2.	TO TAKE OUT A CASSETTE WHEN NOT EJECT		SCHEMATIC DIAGRAM ······	4-13
	(FORCE EJECT)1-1		• PD-156 (2/2)(DRIVER, TIMING GENERATOR)	
1-2.	SELF-DIAGNOSIS FUNCTION1-2		SCHEMATIC DIAGRAM	4-15
1.	Self-diagnosis Function		• PD-160 (1/2)(CHA, DISPLAY DRIVE, BACK LIC	HT)
2.	Self-diagnosis Display		SCHEMATIC DIAGRAM	
3.	Service Mode Display		• PD-160 (2/2)(LCD DRIVE, TG)	
	Display Method		SCHEMATIC DIAGRAM ·······	4_19
3-1.			• LS-057 (S/T REEL SENSOR), FP-228 (DEW SEN	
3-2.	Switching of Backup No.         1-2           End of Display         1-2		FP-299 (MODE SWITCH), FP-300 (TAPE TOP),	50K),
3-3.			FP-302 (TAPE END), FP-301 (TAPE LED) FLEXI	DIE
4.	Self-diagnosis Code Table1-3		SCHEMATIC DIAGRAMS	
_	DIGAGGENERA			4-21
2.	DISASSEMBLY		• FP-410 FLEXIBLE,	
2-1.	2.5 INCH LCD UNIT, PD-156/160 BOARD -12-2		CONTROL SWITCH BLOCK (SS-1380)	4.01
2-2.	2.5 INCH LCD UNIT, PD-156/160 BOARD -22-3		SCHEMATIC DIAGRAM	4-21
2-3.	3.5 INCH LCD UNIT, PD-156/160 BOARD -12-4	1		
2-4.	3.5 INCH LCD UNIT, PD-156/160 BOARD -22-4		Shematic diagram of the VC-278 board are not sl	nown.
2-5.	BACK LIGHT2-5		Pages from 4-23 to 4-72 are not shown.	
2-6.	FRONT PANEL SECTION2-6	ı		
2-7.	SI-032 BOARD2-6	4-3.	PRINTED WIRING BOARDS	
2-8.	MICROPHONE2-7		• CD-358 (CCD IMAGER)	
2-9.	CABINET (R) SECTION2-8		PRINTED WIRING BOARD	4_73
	LENS SECTION2-9		• LB-076 (EVF, BACK LIGHT)	<b></b> 13
	CD-358 BOARD2-9		PRINTED WIRING BOARD	4 74
2-12	IRIS FLEXIBLE ASSEMBLY2-10			4-/4
2-12.	EVF SECTION 2-11		• SI-032 (STEADY SHOT, LASER LINK)	175
	LB-076 BOARD -12-11		PRINTED WIRING BOARD	
	LB-076 BOARD -22-11		• FP-411 FLEXIBLE BOARD	
			• LS-057 (S/T REEL SENSOR), FP-228 (DEW SEN	SOR),
Z-10.	BATTERY PANEL SECTION2-13		FP-299 (MODE SWITCH), FP-300 (TAPE TOP),	
	BATTERY TERMINAL BOARD2-13		FP-302 (TAPE END), FP-301 (TAPE LED)	
	MEMORY STICK 10P CONNECTOR2-14		FLEXIBLE BOARDS	
2-19.	CONTROL SWITCH BLOCK (SS-1380)2-14		• FP-410 FLEXIBLE BOARD ·····	··· 4-78
2-20.	CABINET (L) SECTION2-15		• PD-156 (LCD DRIVER, BACKLIGHT, DRIVER,	
2-21.	CS FRAME ASSEMBLY (25)2-15		TIMING GENERATOR)	
2-22.	VC-278 BOARD2-16		PRINTED WIRING BOARD	4-79
	MECHANISM DECK2-16		• PD-160 (CHA, DISPLAY DRIVE, BACK LIGHT,	LCD
2-24.	CONTROL SWITCH BLOCK (CF-2500)2-19		DRIVE, TG)	
2-25.	CONTROL SWITCH BLOCK (FK-2500) ······2-19		PRINTED WIRING BOARD	4-83
	HINGE SECTION2-20		• FP-412 FLEXIBLE BOARD	4-86
2-27.	CIRCUIT BOARDS LOCATION2-21			
2-28.	FLEXIBLE BOARDS LOCATION2-22		Printed wiring board of the VC-278 board are not sh	nown
			Pages from 4-87 to 4-90 are not shown.	
3.	BLOCK DIAGRAMS	Į	1 ages from 4-07 to 4-30 are not shown.	
3-1.	OVERALL BLOCK DIAGRAM (1/6)3-1	4.4	WALEEOD 16	4.01
3-2.	OVERALL BLOCK DIAGRAM (2/6)3-3	4-4.	WAVEFORMS ·····	4-91
3-2. 3-3.	OVERALL BLOCK DIAGRAM (3/6)3-5	ſ		1
	OVERALL BLOCK DIAGRAM (4/6)3-7		Waveforms of the VC-278 board are not shown.	
3-4.			Pages from 4-93 to 4-95 are not shown.	
3-5.	OVERALL BLOCK DIAGRAM (5/6)3-9	l	<u> </u>	J
3-6.	OVERALL BLOCK DIAGRAM (6/6)3-11	4-5.	MOUNTED PARTS LOCATION	4-96
3-7.	POWER BLOCK DIAGRAM (1/3)3-13	7 5.	MOCIVIED TAKES EGGATION	7 70
3-8.	POWER BLOCK DIAGRAM (2/3) 3-15	[	Mounted parts location of the VC-278 board is not s	hown
3-9.	POWER BLOCK DIAGRAM (3/3) 3-17			HOWII.
			Pages from 4-97 to 4-98 are not shown.	
4.	PRINTED WIRING BOARDS AND			
	SCHEMATIC DIAGRAMS			
4-1.	FRAME SCHEMATIC DIAGRAM (1/2)4-1	5.	ADJUSTMENTS	
	FRAME SCHEMATIC DIAGRAM (2/2)4-3	1.	Adjusting items when replacing main parts and board	ls ·· 5-2
4-2.	SCHEMATIC DIAGRAMS	5-1.	CAMERA SECTION ADJUSTMENT	
	• CD-358 (CCD IMAGER)	1-1.	PREPARATIONS BEFORE ADJUSTMENT	
	SCHEMATIC DIAGRAM ······4-7	•	(CAMERA SECTION)	5-4
	• LB-076 (EVF, BACK LIGHT)	1-1-1	List of Service Tools	5-4
	SCHEMATIC DIAGRAM4-8		2. Preparations	
	• SI-032 (STEADY SHOT, LASER LINK),		3. Precaution ·····	
	FP-411 FLEXIBLE	1.	Setting the Switch	
	SCHEMATIC DIAGRAM4-9	2.	Order of Adjustments	
	SCHEMATIC DIAGRAM4-9	∠.	Class of Fragasimonia	5 1

3.	Subjects ·····	5-7	2-1.	Hi8/STANDARD 8 MODE ·····	5-40
1-2.	INITIALIZATION OF 8, A, B, C, D, E, F, 1B, 1C, 1			OPERATING WITHOUT CASSETTE	
	PAGE DATA			TAPE PATH ADJUSTMENT	
1-2-1	.INITIALIZATION OF A, D PAGE DATA		1.	Preparations for Adjustment	
1.	Initializing the A, D Page Data			DIGITAL8 MODE	
2.	Modification of A, D Page Data			HOW TO ENTER RECORD MODE WITHOUT	
3.	A Page Table			CASSETTE	5-41
4.	D Page Table		2-2-2.	HOW TO ENTER PLAYBACK MODE WITHOUT	
	.INITIALIZATION OF B, 1B PAGE DATA			CASSETTE ·····	5-41
1.	Initializing the B, 1B Page Data		2-2-3.	OVERALL TAPE PATH CHECK	
2.	Modification of B, 1B Page Data		1.	Recording of the tape path check signal	
3.	Loader writing inhibit mode setting		2.	Tape path check ······	
4.	B Page Table			VIDEO SECTION ADJUSTMENT	
5.	1B Page Table ·····			PREPARATIONS BEFORE ADJUSTMENTS	
	.INITIALIZATION OF 8, C, 1C PAGE DATA			. Equipment to Required	
1.	Initializing the 8, C, 1C Page Data			Precautions on Adjusting	
2.	Modification of 8, C, 1C Page Data			Adjusting Connectors	
3.	8 Page Table		3-1-4.	.Connecting the Equipment	. 5-44
4.	C Page Table		3-1-5.	Alignment Tape	. 5-45
5.	1C Page Table ·····			.Input/output Level and Impedance	
	.INITIALIZATION OF E, F, 1E, 1F PAGE DATA			SYSTEM CONTROL SYSTEM ADJUSTMENT	
1.	Initializing the E, F, 1E, 1F Page Data		1.	Initialization of 8, A, B, C, D, E, F, 1B, 1C, 1E, 1F Pag	
2.	Modification of E, F, 1E, 1F Page Data			Data ····	
3.	E Page Table		2.	Serial No. Input ····	
4.	F Page Table			Company ID Input ·····	
5.	1E Page Table ·····			Serial No. Input	
6.	1F Page Table ·····			SERVO AND RF SYSTEM ADJUSTMENT	
1-3.	CAMERA SYSTEM ADJUSTMENTS		1.	REEL FG Adjustment (VC-278 board)	
1.	HALL Adjustment ·····		2.	PLL fo & LPF fo Adjustment (VC-278 board)	
2.	Flange Back Adjustment (Using Minipattern Box) ···		3.	Switching Position Adjustment (VC-278 board) ·········	
3.	Flange Back Adjustment (Using Flange Back Adjust		4.	AGC Center Level and APC & AEQ Adjustment	
	Chart and Subject More Than 500m Away)			Preparations before adjustments	
3-1.	Flange Back Adjustment (1)			AGC Center Level Adjustment (VC-278 board)	
3-2.	Flange Back Adjustment (2)			APC & AEQ Adjustment (VC-278 board) ······	
4.	Flange Back Check			Processing after Completing Adjustments	
5.	Mechanical Shutter Adjustment ······		5.	PLL fo & LPF fo Fine Adjustment (VC-278 board) ·····	
6.	Black Defective CCD Adjustment			Hi8/Standard8 Switching Position Adjustment	
7.	Picture Frame Setting			(VC-278 board)	. 5-52
8.	Color Reproduction Adjustment ·····		7.	CAP FG Duty Adjustment (VC-278 board)	
9.	Auto White Balance & LV Standard Data Input			VIDEO SYSTEM ADJUSTMENTS	
10.	Auto White Balance Adjustment		1.	54MHz/66MHz Origin Oscillation Adjustment	
11.	White Balance Check	5-28		(VC-278 board)	. 5-54
12.	Steady Shot Check ·····		2.	S VIDEO OUT Y Level Adjustment (VC-278 board) ···	
1-4.	ELECTRONIC VIEWFINDER SYSTEM		3.	S VIDEO OUT Chroma Level Adjustment	
	ADJUSTMENT	5-30		(VC-278 board)	. 5-55
1.	VCO Adjustment (VC-278 board)		4.	VIDEO OUT Y, Chroma Level Check (VC-278 board)	
2.	RGB AMP Adjustment (VC-278 board)			Hi8/Standard8 Y/C Output Level Setting	,
3.	Contrast Adjustment (VC-278 board)	5-31		(VC-278 board)	5-56
	LCD SYSTEM ADJUSTMENT	5-32	6.	Hi8/standard 8mm AFC fo Adjustment (VC-278 board)	
1-5-1	.LCD Type Check ······	5-32		AUDIO SYSTEM ADJUSTMENTS	
	.LCD SYSTEM ADJUSTMENT (PD-156 board) ·····			Hi8/Standard8 AFM BPF fo Adjustment (VC-278 board)	
1.	VCO Adjustment (PD-156 board)	5-33		Hi8/Standard8 AFM 1.5 MHz Deviation Adjustment	
2.	RGB AMP Adjustment (PD-156 board)	5-33		(VC-278 board)	. 5-58
3.	Contrast Adjustment (PD-156 board)	5-34	3.	Hi8/Standard8 AFM 1.7 MHz Deviation Adjustment	
4.	COM AMP Adjustment (PD-156 board)	5-34		(VC-278 board)	. 5-58
5.	V-COM Adjustment (PD-156 board)	5-35	4.	Digital8 Playback Level Check	
6.	White Balance Adjustment (PD-156 board)			Overall Level Characteristics Check	
	.LCD SYSTEM ADJUSTMENT (PD-160 board) ·····	5-36	6.	Overall Distortion Check	5-58
1.	VCO Adjustment (PD-160 board)	5-36	7.	Overall Noise Level Check	. 5-59
2.	PSIG Gray Adjustment (PD-160 board) ·······	5-36	8.	Overall Separation Check	. 5-59
3.	RGB AMP Adjustment (PD-160 board)	5-37		SERVICE MODE	
4.	Black Limit Adjustment (PD-160 board)			ADJUSTMENT REMOTE COMMANDER	
5.	Contrast Adjustment (PD-160 board)	5-38	1.	Using the Adjustment Remote Commander	
6.	Center Level Adjustment (PD-160 board)	5-38	2.	Precautions Upon Using the Adjustment Remote	
7.	V-COM Adjustment (PD-160 board)	5-39	•	Commander	5-60
8.	White Balance Adjustment (PD-160 board)		4-2.	DATA PROCESS	
5-2.	MECHANISM SECTION ADJUSTMENT			SERVICE MODE	

1.	Setting the Test Mode5-62
2.	Emergence Memory Address5-62
2-1.	EMG Code (Emergency Code)5-62
2-2.	MSW Code5-63
3.	Bit Value Discrimination5-64
4.	Switch check (1)5-64
5.	Switch check (2)5-64
6.	Switch check (3)5-65
7.	Switch check (4)5-65
8.	Record of Use check (1)5-65
9.	Record of Use check (2)5-66
10.	Record of Self-diagnosis check5-66
6.	REPAIR PARTS LIST
6-1.	EXPLODED VIEWS6-1
6-1-1	OVERALL SECTION6-1
6-1-2	.CABINET (L) SECTION-16-2
6-1-3	.CABINET (L) SECTION-26-3
6-1-4	LENS, EVF SECTION6-4
6-1-5	.CABINET (R) SECTION6-5
6-1-6	LCD SECTION (2.5 INCH LCD MODEL)
	(TRV738E/TRV740/TRV740E)6-6
6-1-7	LCD SECTION (3.5 INCH LCD MODEL) (TRV840) ·· 6-7
	.CASSETTE COMPARTMENT ASSY, DRUM ASSY ··· 6-8
	LS CHASSIS BLOCK ASSEMBLY6-9
6-1-1	0. MECHANICAL CHASSIS BLOCK ASSEMBLY-1 ·· 6-10
	1. MECHANICAL CHASSIS BLOCK ASSEMBLY-2 ·· 6-11
6-2.	ELECTRICAL PARTS LIST6-12

Pages from 6-17 to 6-25 are not shown.

\* Color reproduction frame are shown on page 181.

Parts list of the VC-278 board are not shown.



## SECTION 1 SERVICE NOTE

#### 1-1. SERVICE NOTE

#### 1. POWER SUPPLY DURING REPAIRS

In this unit, about 10 seconds after power is supplied (8.4V) to the battery terminal using the service power code (J-6082-223-A), the power is shut off so that the unit cannot operate.

These following two methods are available to prevent this. Take note of which to use during repairs.

#### Method 1.

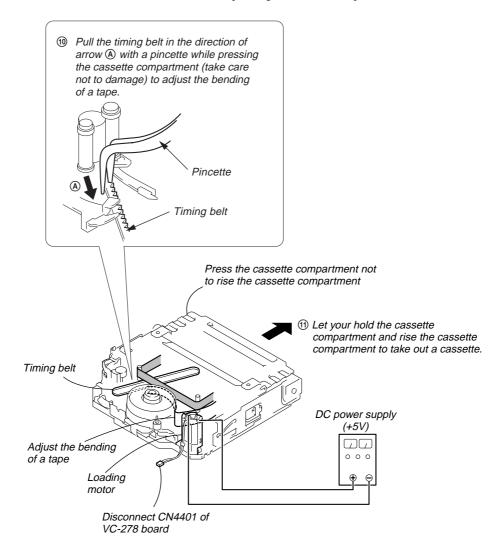
Use the DC IN terminal. (Use the AC power adaptor.)

#### Method 2.

Connect the adjustment remote commander RM-95 (J-6082-053-B) to the LANC jack, and set the HOLD switch to the "ADJ" side.

#### 2. TO TAKE OUT A CASSETTE WHEN NOT EJECT (FORCE EJECT)

- ① Refer to 2-6. to remove the front panel section.
- 2 Refer to 2-9. to remove the cabinet (upper) section.
- 3 Refer to 2-9. to remove the cabinet (R) section.
- 4 Refer to 2-10. to remove the lens section.
- **⑤** Refer to 2-13. to remove the EVF section.
- **6** Refer to 2-16. to remove the battery panel section.
- (Telegraphics) Refer to 2-19. and 2-21. to remove the cabinet (L) section. (Include the CS frame assembly and control switch block (SS-1380).)
- 8 Disconnect CN4401 (2P) of VC-278 board.
- Add +5V from the DC POWER SUPPLY and unload with a pressing the cassette compertment.



#### 1-2. SELF-DIAGNOSIS FUNCTION

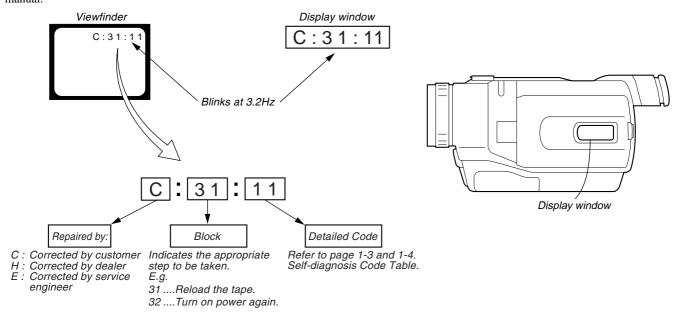
#### 1. Self-diagnosis Function

When problems occur while the unit is operating, the self-diagnosis function starts working, and displays on the viewfinder or Display window what to do. This function consists of two display; self-diagnosis display and service mode display.

Details of the self-diagnosis functions are provided in the Instruction manual.

#### 2. Self-diagnosis Display

When problems occur while the unit is operating, the counter of the viewfinder or Display window shows a 4-digit display consisting of an alphabet and numbers, which blinks at 3.2 Hz. This 5-character display indicates the "repaired by:", "block" in which the problem occurred, and "detailed code" of the problem.

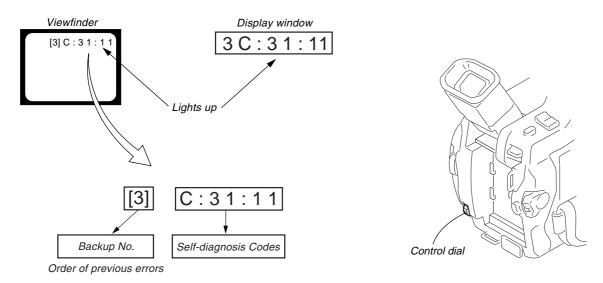


#### 3. Service Mode Display

The service mode display shows up to six self-diagnosis codes shown in the past.

#### 3-1. Display Method

While pressing the "STOP" key, set the switch from OFF to "VTR or PLAYER", and continue pressing the "STOP" key for 5 seconds continuously. The service mode will be displayed, and the counter will show the backup No. and the 5-character self-diagnosis codes.



#### 3-2. Switching of Backup No.

By rotating the control dial, past self-diagnosis codes will be shown in order. The backup No. in the [] indicates the order in which the problem occurred. (If the number of problems which occurred is less than 6, only the number of problems which occurred will be shown.)

[1]: Occurred first time
[2]: Occurred second time
[3]: Occurred third time
[6]: Occurred the last time

#### 3-3. End of Display

Turning OFF the power supply will end the service mode display.

Note: The "self-diagnosis display" data will be kept even if lithium battery (CF-2500 block BT001 of cabinet (R) assembly) is removed.

#### 4. Self-diagnosis Code Table

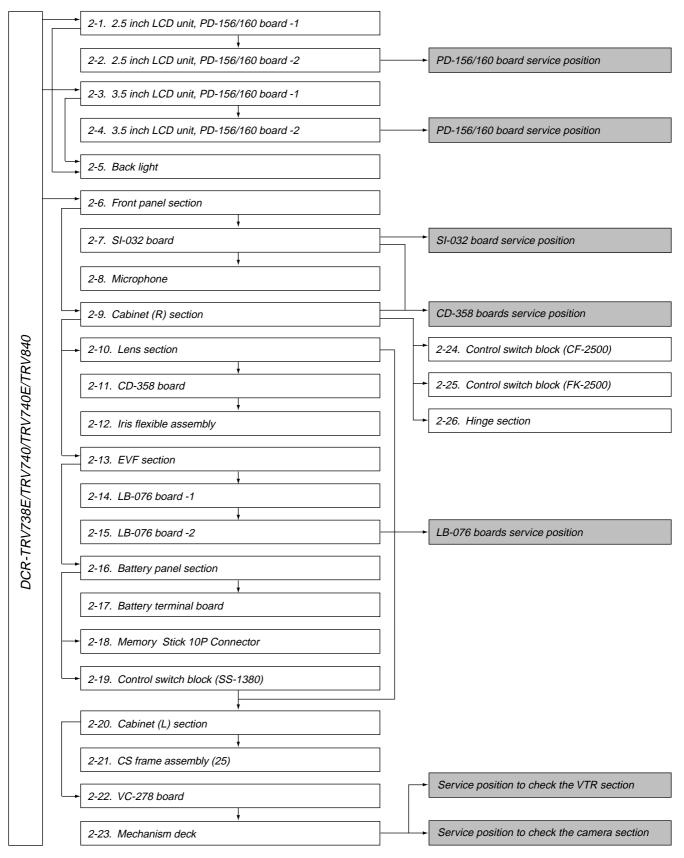
S	Self-diagnosis Code			de		
Repaired by:	Block Function		Detailed Code		Symptom/State	Correction
C	0	4	0	0	Non-standard battery is used.	Use the InfoLITHIUM battery.
C	2	1	0	0	Condensation.	Remove the cassette, and insert it again after one hour.
C	2	2	0	0	Video head is dirty.	Clean with the optional cleaning cassette.
С	3	1	1	0	LOAD direction. Loading does not complete within specified time	Load the tape again, and perform operations from the beginning.
С	3	1	1	1	UNLOAD direction. Loading does not complete within specified time	Load the tape again, and perform operations from the beginning.
С	3	1	2	0	T reel side tape slacking when unloading.	Load the tape again, and perform operations from the beginning.
C	3	1	2	1	S reel side tape slacking when unloading.	Load the tape again, and perform operations from the beginning.
C	3	1	2	2	T reel fault.	Load the tape again, and perform operations from the beginning.
C	3	1	2	3	S reel fault.	Load the tape again, and perform operations from the beginning.
C	3	1	3	0	FG fault when starting capstan.	Load the tape again, and perform operations from the beginning.
С	3	1	3	1	FG fault during normal capstan operations.	Load the tape again, and perform operations from the beginning.
C	3	1	4	0	FG fault when starting drum.	Load the tape again, and perform operations from the beginning.
C	3	1	4	1	PG fault when starting drum.	Load the tape again, and perform operations from the beginning.
C	3	1	4	2	FG fault during normal drum operations.	Load the tape again, and perform operations from the beginning.
C	3	1	4	3	PG fault during normal drum operations.	Load the tape again, and perform operations from the beginning.
C	3	1	4	4	Phase fault during normal drum operations.	Load the tape again, and perform operations from the beginning.
C	3	2	1	0	LOAD direction loading motor time-	Remove the battery or power cable, connect, and perform
L			•		out.	operations from the beginning.
С	3	2	1	1	UNLOAD direction loading motor time-out.	Remove the battery or power cable, connect, and perform operations from the beginning.
С	3	2	2	0	T reel side tape slacking when unloading.	Remove the battery or power cable, connect, and perform operations from the beginning.
С	3	2	2	1	S reel side tape slacking when unloading.	Remove the battery or power cable, connect, and perform operations from the beginning.
С	3	2	2	2	T reel fault.	Remove the battery or power cable, connect, and perform operations from the beginning.
С	3	2	2	3	S reel fault.	Remove the battery or power cable, connect, and perform operations from the beginning.
С	3	2	3	0	FG fault when starting capstan.	Remove the battery or power cable, connect, and perform operations from the beginning.
С	3	2	3	1	FG fault during normal capstan operations.	Remove the battery or power cable, connect, and perform operations from the beginning.
С	3	2	4	0	FG fault when starting drum.	Remove the battery or power cable, connect, and perform operations from the beginning.
С	3	2	4	1	PG fault when starting drum.	Remove the battery or power cable, connect, and perform operations from the beginning.
С	3	2	4	2	FG fault during normal drum operations.	Remove the battery or power cable, connect, and perform operations from the beginning.
С	3	2	4	3	PG fault during normal drum operations.	Remove the battery or power cable, connect, and perform operations from the beginning.
С	3	2	4	4	Phase fault during normal drum operations.	Remove the battery or power cable, connect, and perform operations from the beginning.

S	Self-diagnosis Code		diagnosis Code					
Repaired by:	Blo Func		Detailed Code				Symptom/State	Correction
Е	6	1	0	0	Difficult to adjust focus (Cannot initialize focus.)	Inspect the lens block focus reset sensor (Pin ② of CN1551 of VC-278 board) when focusing is performed when the focus ring is rotated in the focus manual mode and the focus motor drive circuit (IC1555 of VC-278 board) when the focusing is not performed.		
Е	6	1	1	0	Zoom operations fault (Cannot initialize zoom lens.)	Inspect the lens block zoom reset sensor (Pin ① of CN1551 of VC-278 board) when zooming is performed when the zoom switch is operated and the zoom motor drive circuit (IC1555 of VC-278 board) when zooming is not performed.		
Е	6	2	0	0	Handshake correction function does not work well. (With pitch angular velocity sensor output stopped.)	Inspect pitch angular velocity sensor (SE301 of SE-032 board) peripheral circuits.		
Е	6	2	0	1	Handshake correction function does not work well. (With yaw angular velocity sensor output stopped.)	Inspect yaw angular velocity sensor (SE302 of SE-032 board) peripheral circuits.		



## SECTION 2 DISASSEMBLY

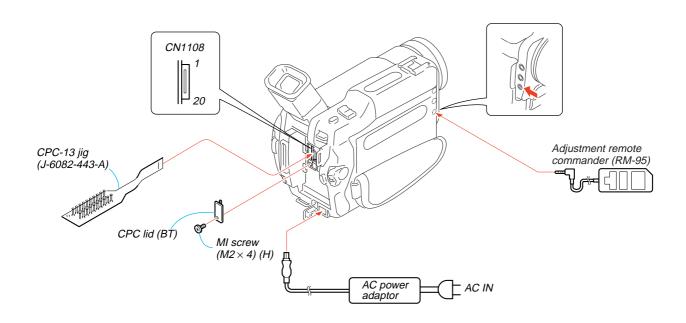
The following flow chart shows the disassembly procedure.



2.5 inch LCD model :TRV738E/TRV740/TRV740E

3.5 inch LCD model : TRV840

#### [CONNECTION OF EQUIPMENTS]



**NOTE:** Follow the disassembly procedure in the numerical order given.

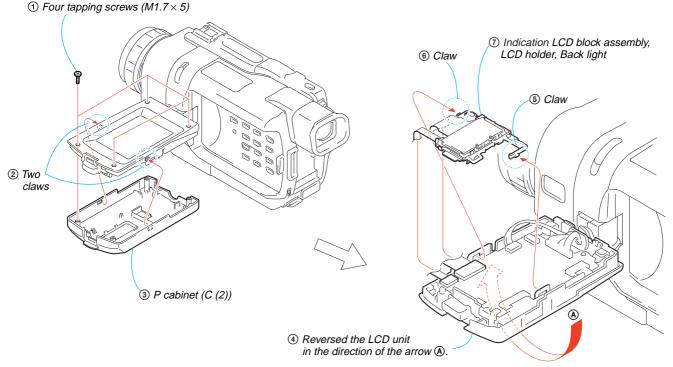
#### 2-1. 2.5 INCH LCD UNIT, PD-156/160 BOARD -1

NOTE: PD-156 board : TRV738E/TRV740E (AEP,EE,NE,RU) PD-160 board : TRV740/TRV740E (E,HK,AUS,CH,JE)

Refer to page 5-32 for 1-5-1. "LCD Type Check" of this manual for the detail.

HK : Hong Kong model
AUS : Australian model
CH : Chinese model
JE : Tourist model
EE : East European model

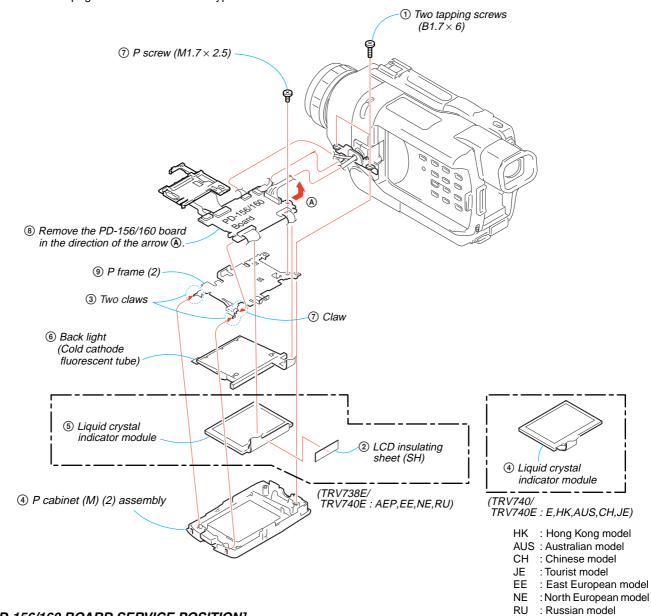
NE: North European model RU: Russian model

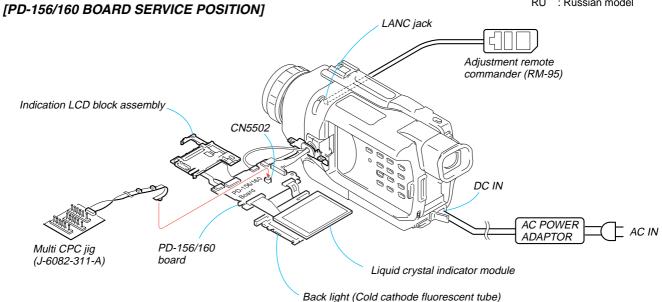


#### 2-2. 2.5 INCH LCD UNIT, PD-156/160 BOARD -2

NOTE: PD-156 board: TRV738E/TRV740E (AEP,EE,NE,RU) PD-160 board: TRV740/TRV740E (E,HK,AUS,CH,JE)

Refer to page 5-32 for 1-5-1. "LCD Type Check" of this manual for the detail.

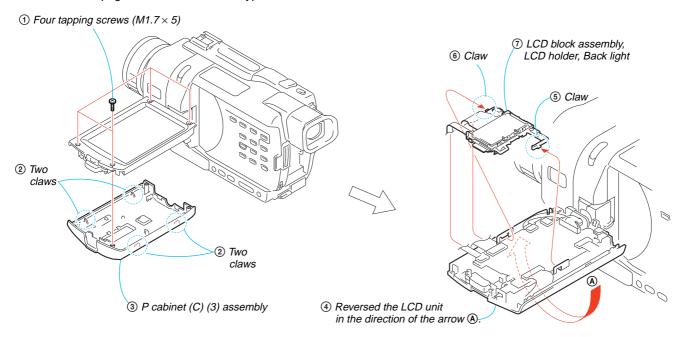




#### 2-3. 3.5 INCH LCD UNIT, PD-156/160 BOARD -1

NOTE: 3.5 inch LCD model is TRV840 only.

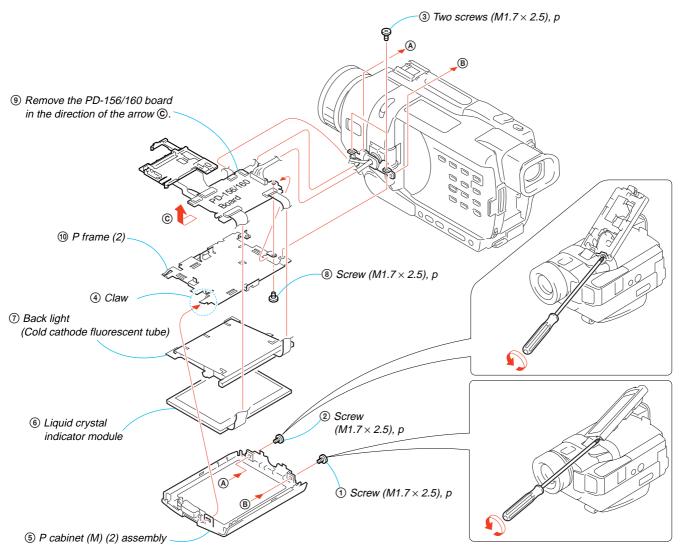
Refer to page 5-32 for 1-5-1. "LCD Type Check" of this manual for the detail.



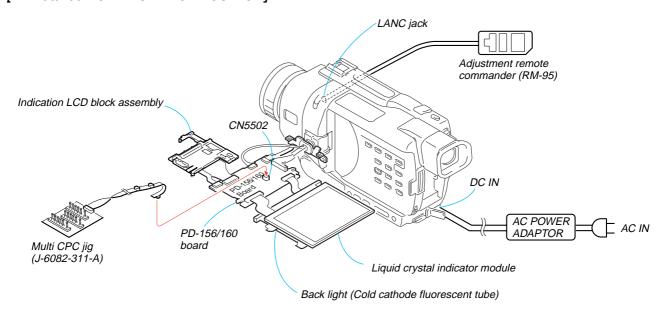
#### 2-4. 3.5 INCH LCD UNIT, PD-156/160 BOARD -2

NOTE: 3.5 inch LCD model is TRV840 only.

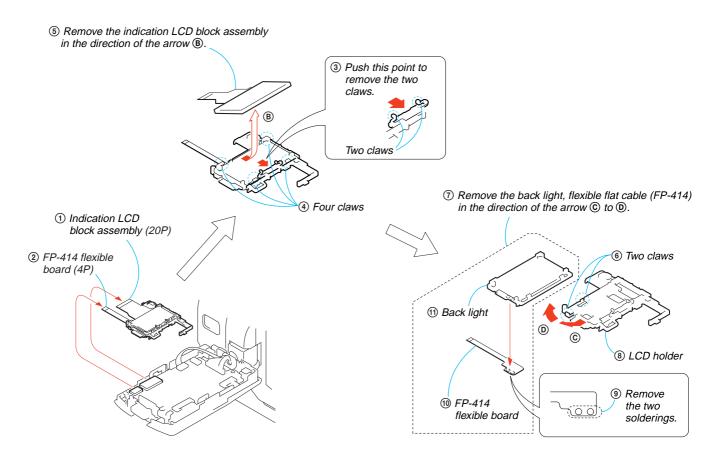
Refer to page 5-32 for 1-5-1. "LCD Type Check" of this manual for the detail.



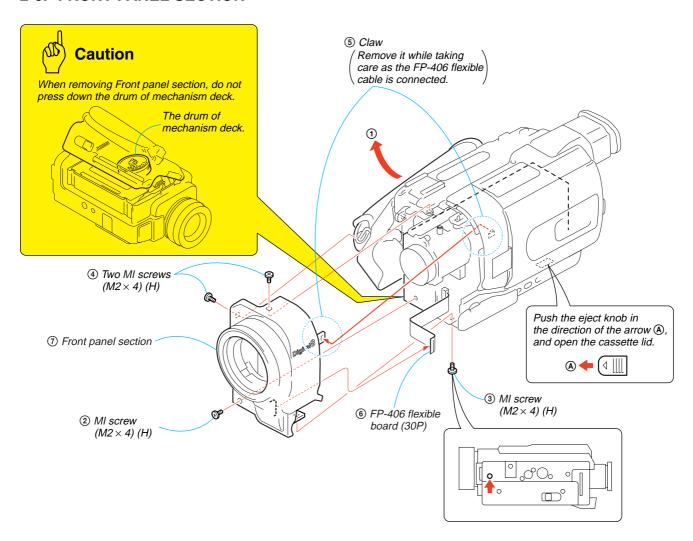
#### [PD-156/160 BOARD SERVICE POSITION]



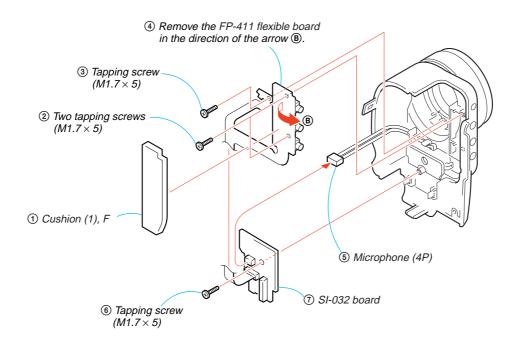
#### 2-5. BACK LIGHT



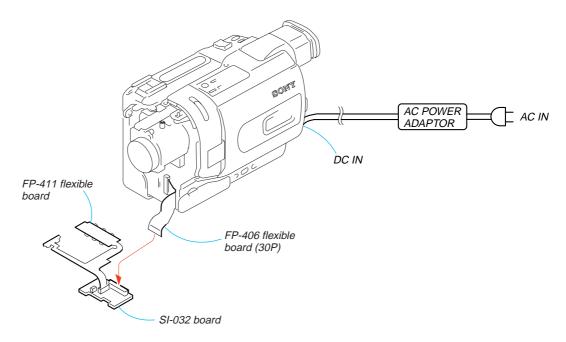
#### 2-6. FRONT PANEL SECTION



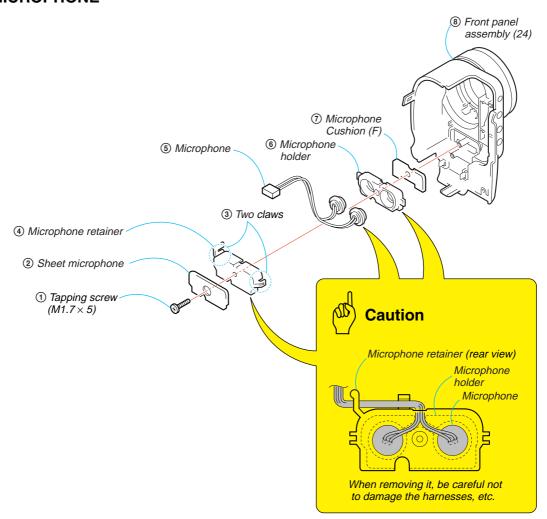
#### 2-7. SI-032 BOARD



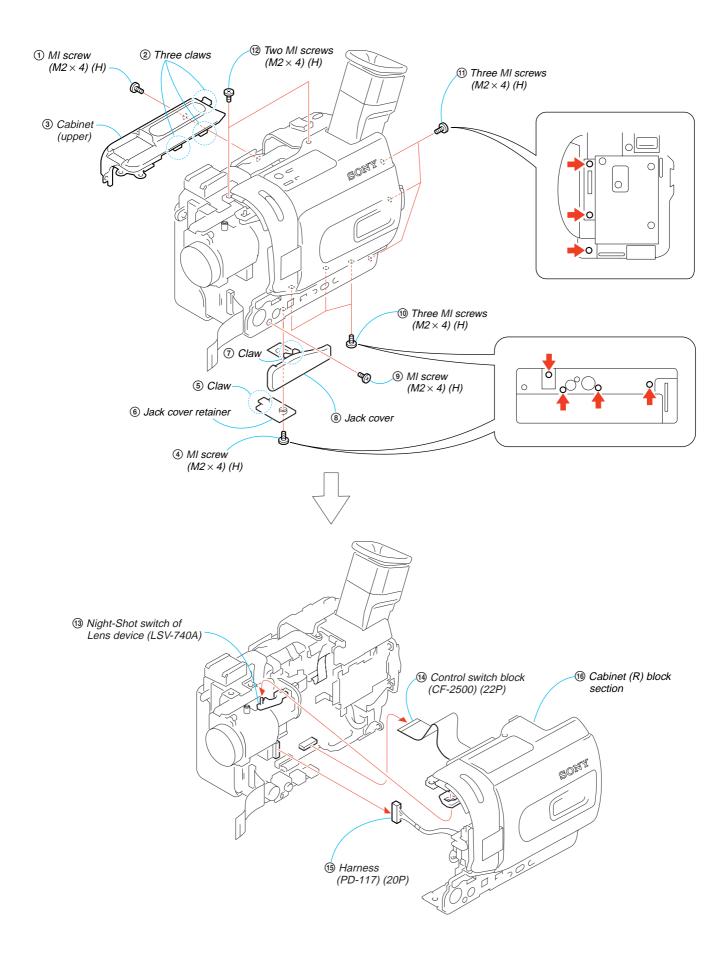
#### [SI-032 BOARD SERVICE POSITION]



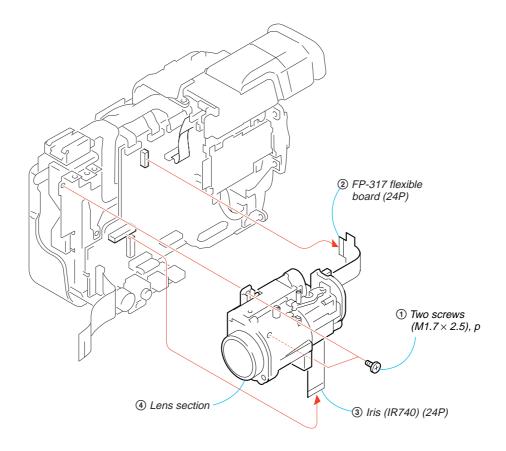
#### 2-8. MICROPHONE



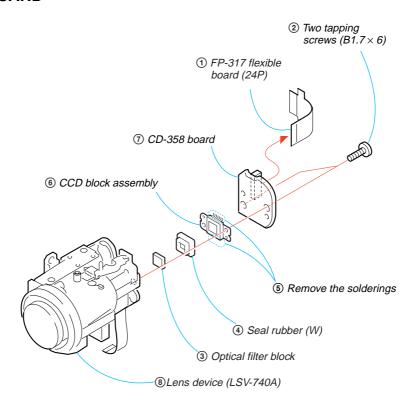
#### 2-9. CABINET (R) SECTION



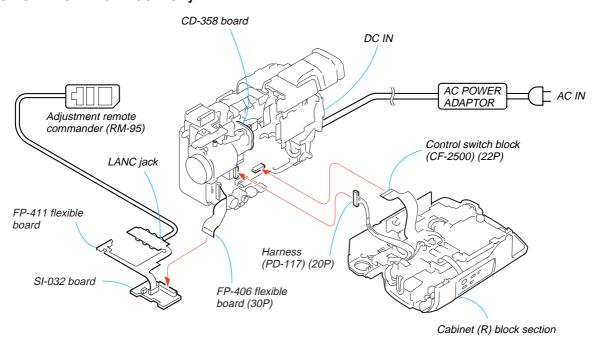
#### 2-10.LENS SECTION



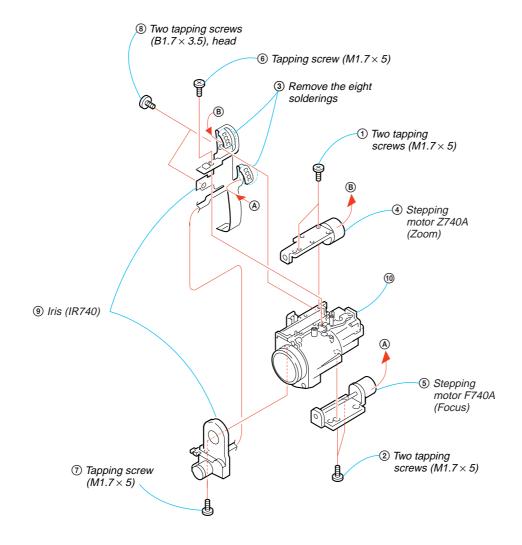
#### 2-11.CD-358 BOARD



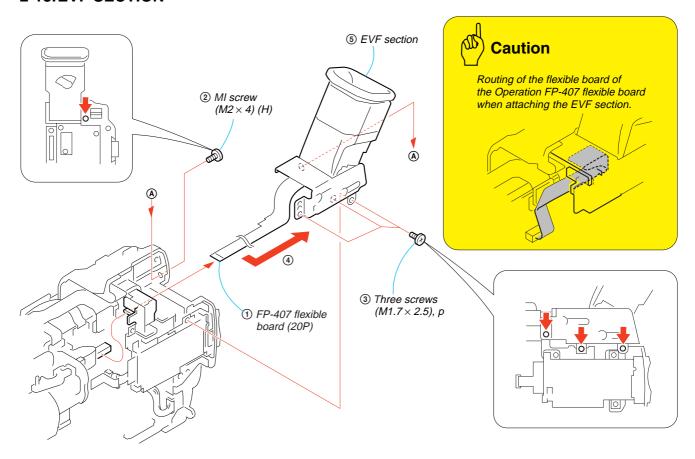
#### [CD-358 BOARD SERVICE POSITION]



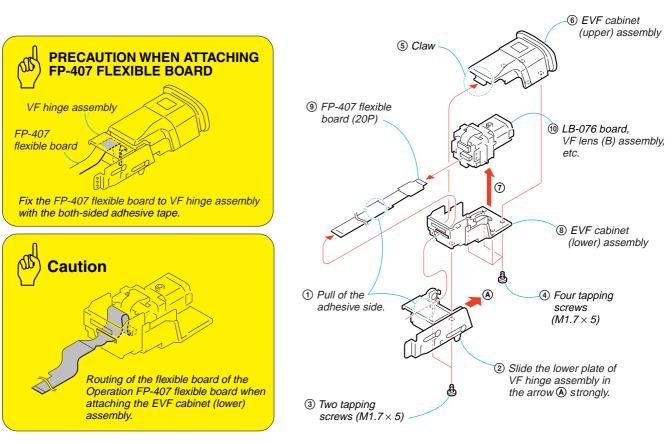
#### 2-12.IRIS FLEXIBLE ASSEMBLY



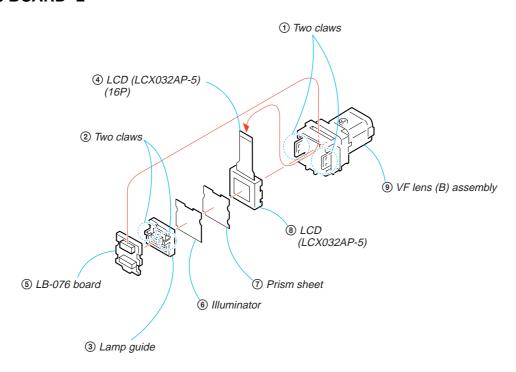
#### 2-13. EVF SECTION



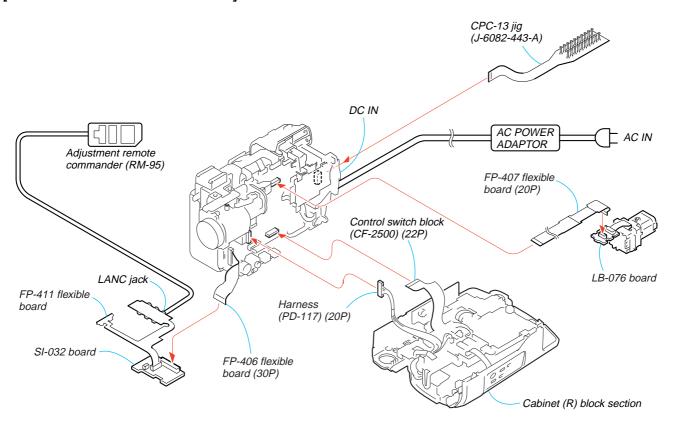
#### 2-14.LB-076 BOARD -1



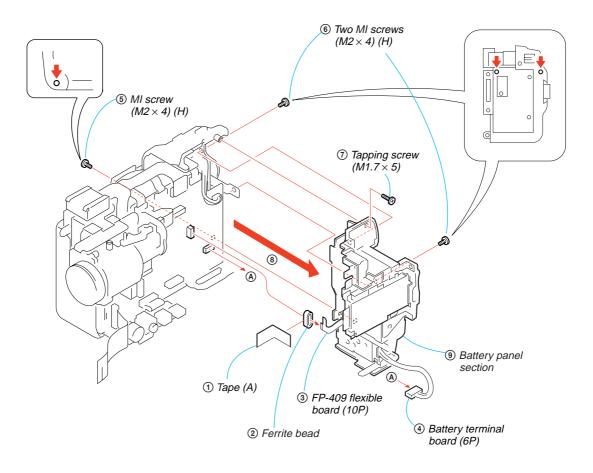
#### 2-15.LB-076 BOARD -2



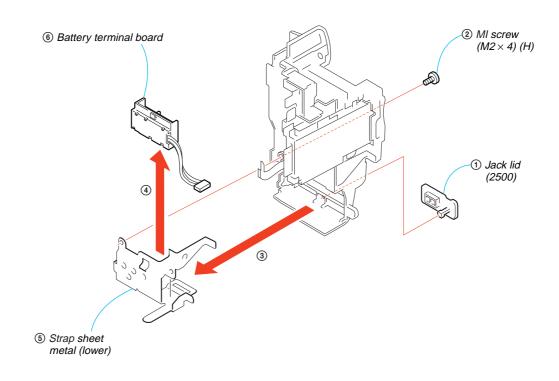
#### [LB-076 BOARD SERVICE POSITION]



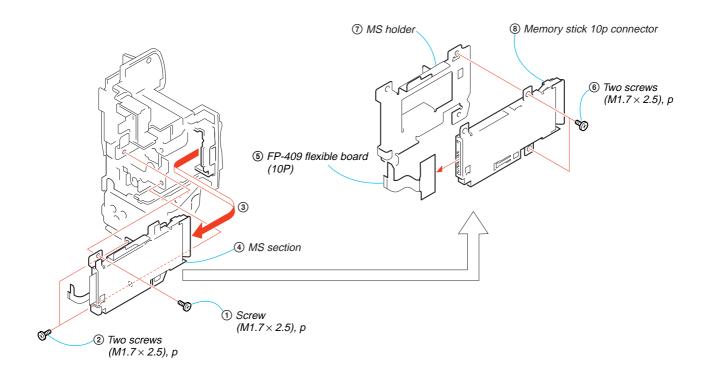
#### 2-16. BATTERY PANEL SECTION



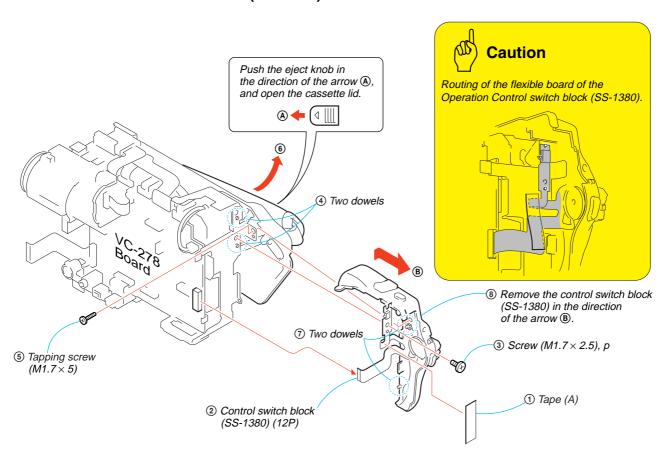
#### 2-17. BATTERY TERMINAL BOARD



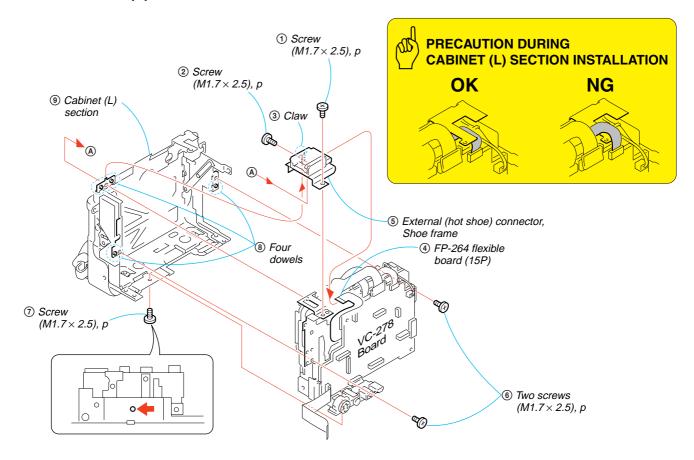
#### 2-18. MEMORY STICK 10P CONNECTOR



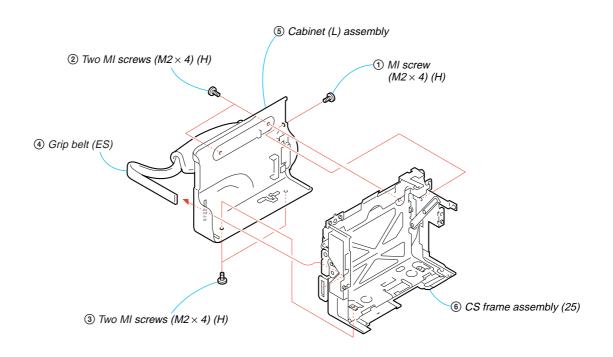
#### 2-19. CONTROL SWITCH BLOCK (SS-1380)



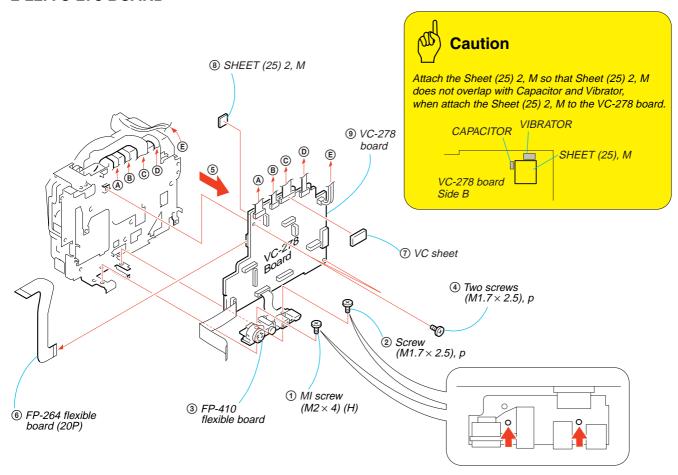
#### 2-20. CABINET (L) SECTION



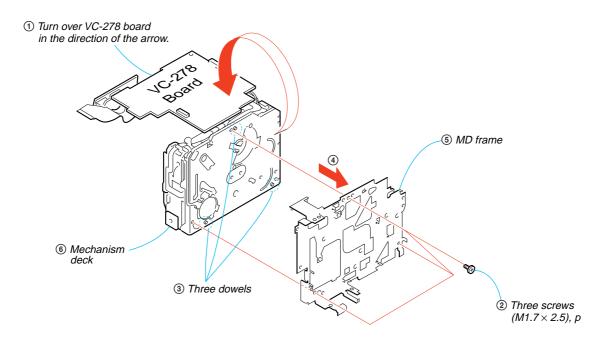
#### 2-21.CS FRAME ASSEMBLY (25)



#### 2-22.VC-278 BOARD



#### 2-23. MECHANISM DECK



#### [SERVICE POSITION TO CHECK THE VTR SECTION]

#### **Cnnection to Check the VTR Section**

To check the VTR section, set the VTR to the "Forced VTR power ON" mode.

Operate the VTR functions using the adjustment remote commander (with the HOLD switch set in the OFF position).

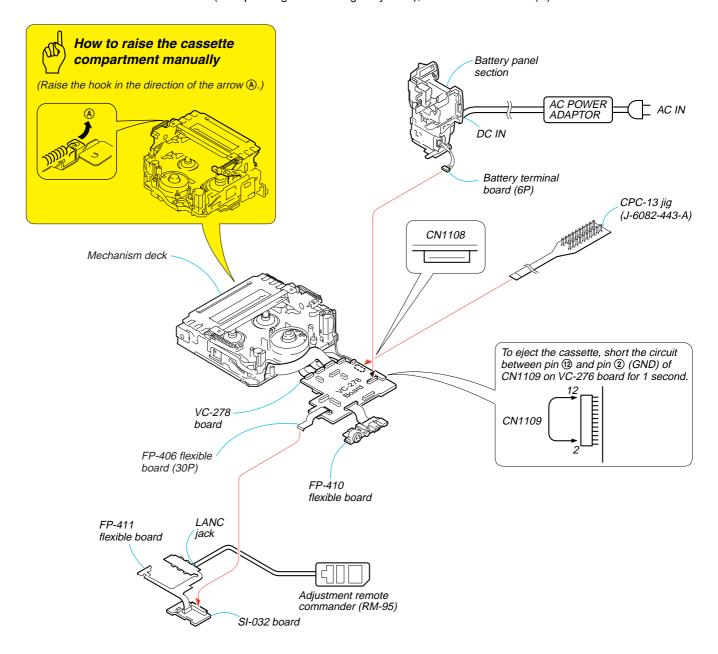
#### Setting the "Forced VTR Power ON" mode

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 0, address: 10, and set data: 00.
- Select page: D, address: 10, set data: 02 and press the PAUSE button of the adjustment remote commander.

#### **Exiting the "Forced VTR Power ON" mode**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 0, address: 10, and set data: 00.
- 3) Select page: D, address: 10, set data: 00, and press the PAUSE button of the adjustment remote commander.
- 4) Select page: 0, address: 01, and set data: 00.

Note: If the machine malfunctions (the operating mode changes by itself), connect the Cabinet (R) section.



#### [SERVICE POSITION TO CHECK THE CAMERA SECTION]

#### **Connection to Check the Camera Section**

To check the camera section, set the camera to the "Forced camera power ON" mode. When you want to operate to focus, use the controls on the remote commander (with the HOLD switch off).

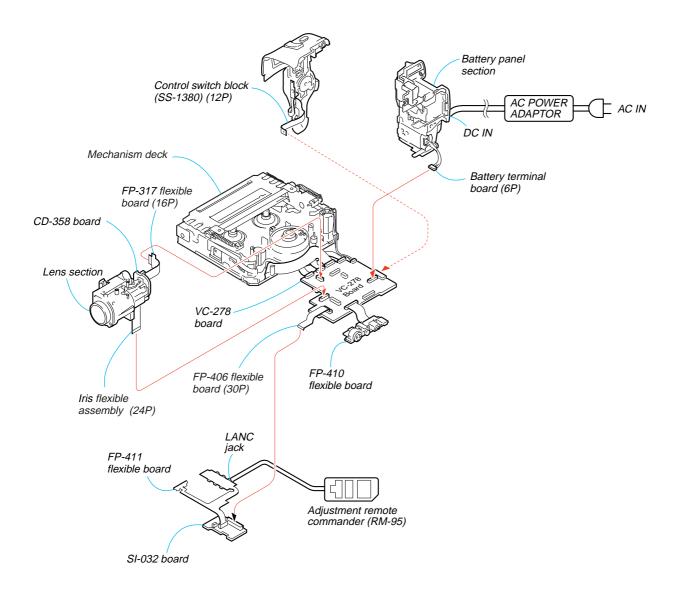
When you want to operate to zoom, connect the controls switch block (SS-1380).

#### Setting the "Forced Camera Power ON" mode

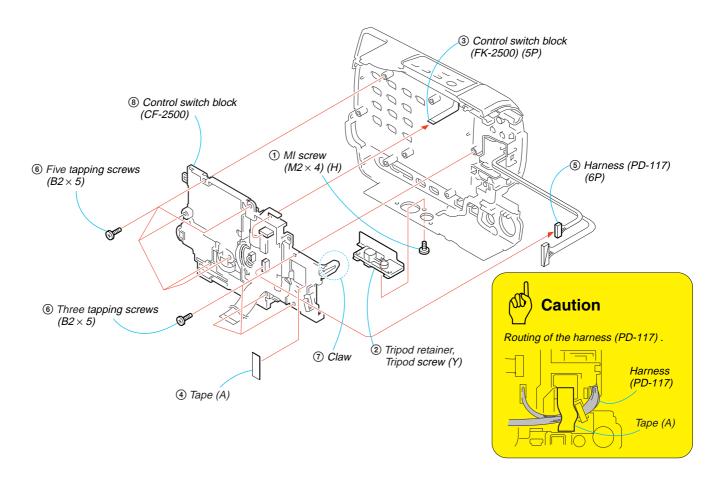
- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 0, address: 10, and set data: 00.
- Select page: D, address: 10, set data: 01 and press the PAUSE button of the adjustment remote commander.

#### **Exiting the "Forced Camera Power ON" mode**

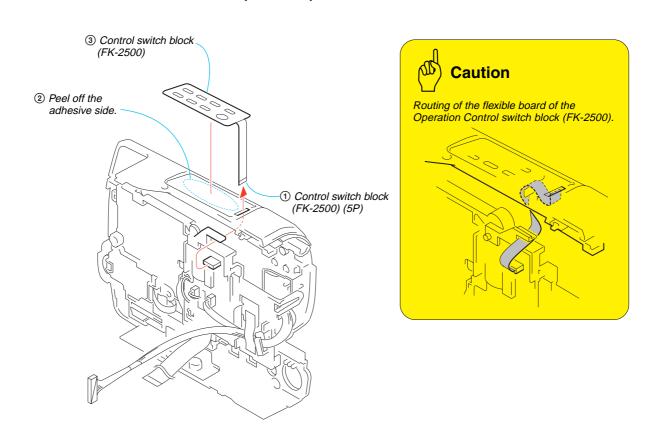
- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 0, address: 10, and set data: 00.
- Select page: D, address: 10, set data: 00, and press the PAUSE button of the adjustment remote commander
- 4) Select page: 0, address: 01, and set data: 00.



#### 2-24. CONTROL SWITCH BLOCK (CF-2500)

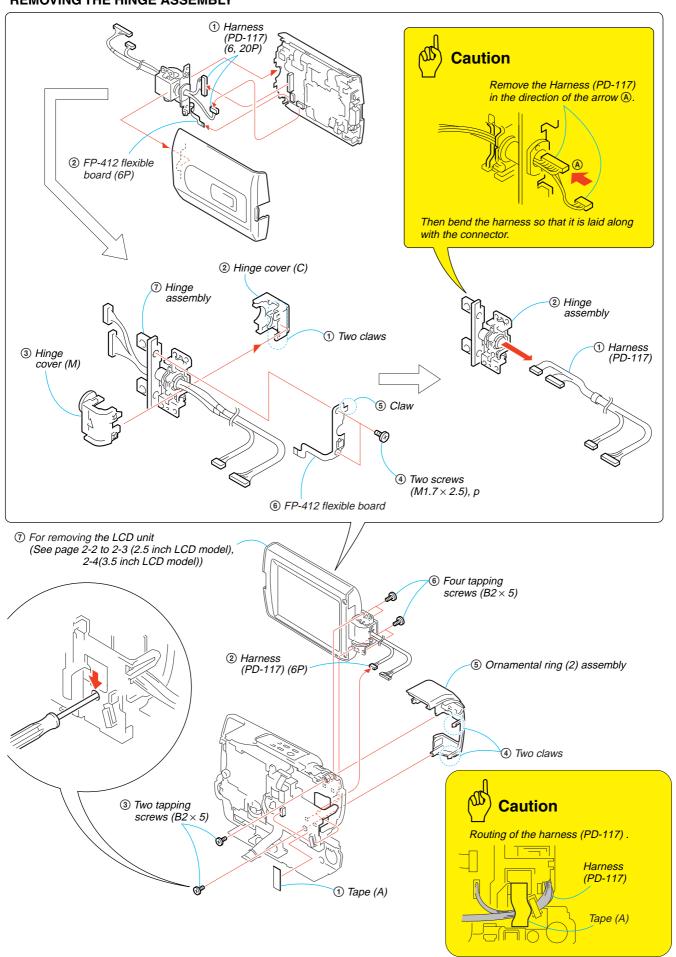


#### 2-25. CONTROL SWITCH BLOCK (FK-2500)



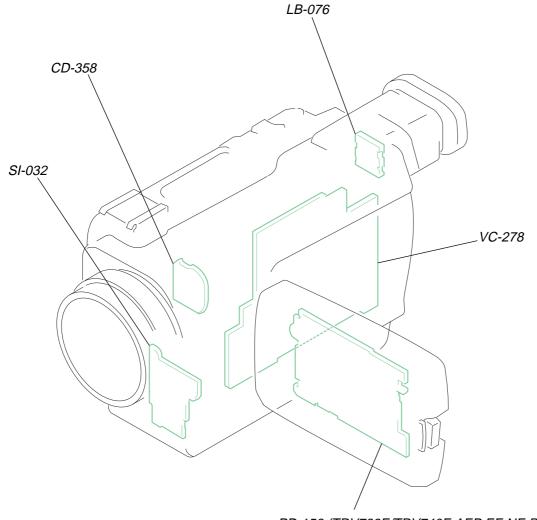
#### 2-26. HINGE SECTION

#### **REMOVING THE HINGE ASSEMBLY**





#### 2-27. CIRCUIT BOARDS LOCATION



PD-156 (TRV738E/TRV740E:AEP,EE,NE,RU/ TRV840) PD-160 (TRV740/TRV740E:E,HK,AUS,CH,JE/ TRV840)

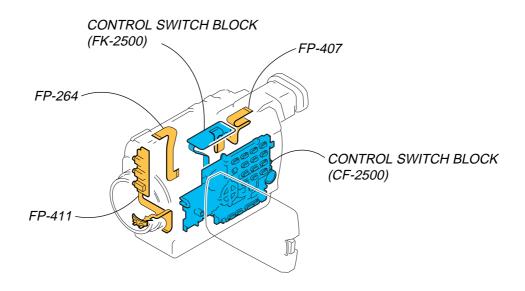
NAME	FUNCTION			
CD-358	CCD IMAGER			
LB-076	LB-076 EVF BACK LIGHT			
PD-156/160	CHA, DISPLAY DRIVE, BACK LIGHT/LCD DRIVE, TG			
SI-032	STEADY SHOT, LASER LINK			
VC-278	CAMERA, VIDEO, DV INTERFACE, CAMERA/MECHA/HI CONTROL, AUDIO, D/D CONVERTER			

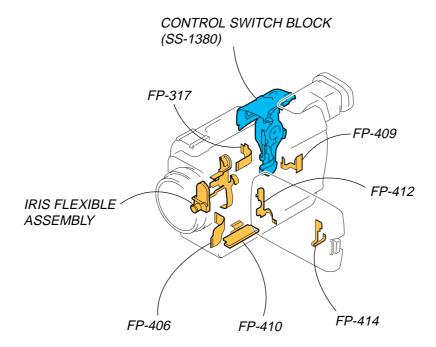
HK : Hong Kong model
AUS : Australian model
CH : Chinese model
JE : Tourist model
EE : East European model
NE : North European model
RU : Russian model



#### 2-28. FLEXIBLE BOARDS LOCATION

The flexible boards contained in the mechanism deck and that in the lens device are not shown.







## 3. BLOCK DIAGRAMS

### Link

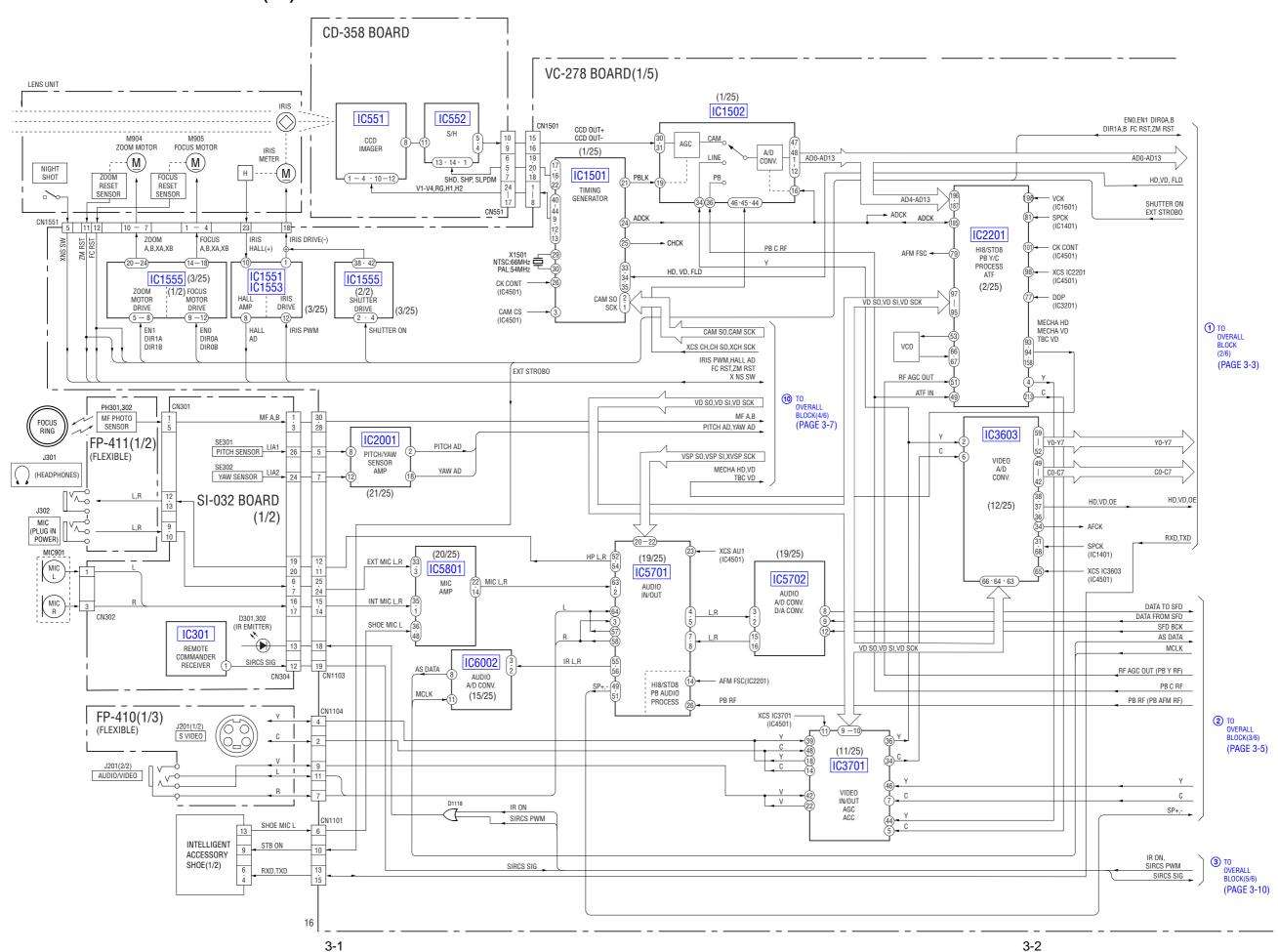
• OVERALL BLOCK DIAGRAM (1/6)	POWER BLOCK DIAGRAM (1/3)
• OVERALL BLOCK DIAGRAM (2/6)	• POWER BLOCK DIAGRAM (2/3)
• OVERALL BLOCK DIAGRAM (3/6)	POWER BLOCK DIAGRAM (3/3)
• OVERALL BLOCK DIAGRAM (4/6)	
• OVERALL BLOCK DIAGRAM (5/6)	
• OVERALL BLOCK DIAGRAM (6/6)	



#### SECTION 3 BLOCK DIAGRAMS

#### 3. BLOCK DIAGRAMS

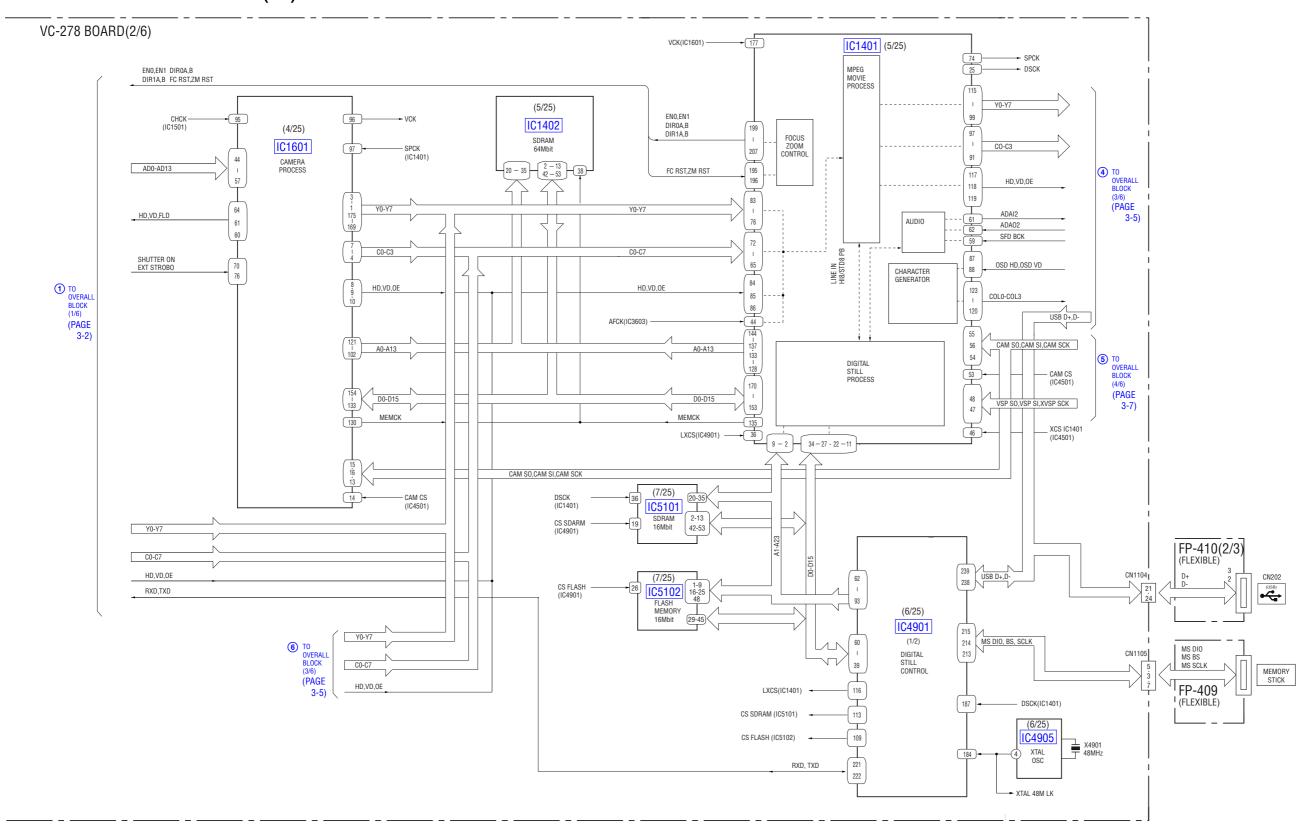
**3-1. OVERALL BLOCK DIAGRAM (1/6)** (): Number in parenthesis () indicates the division number of schematic diagram where the component is located.





#### 3. BLOCK DIAGRAMS

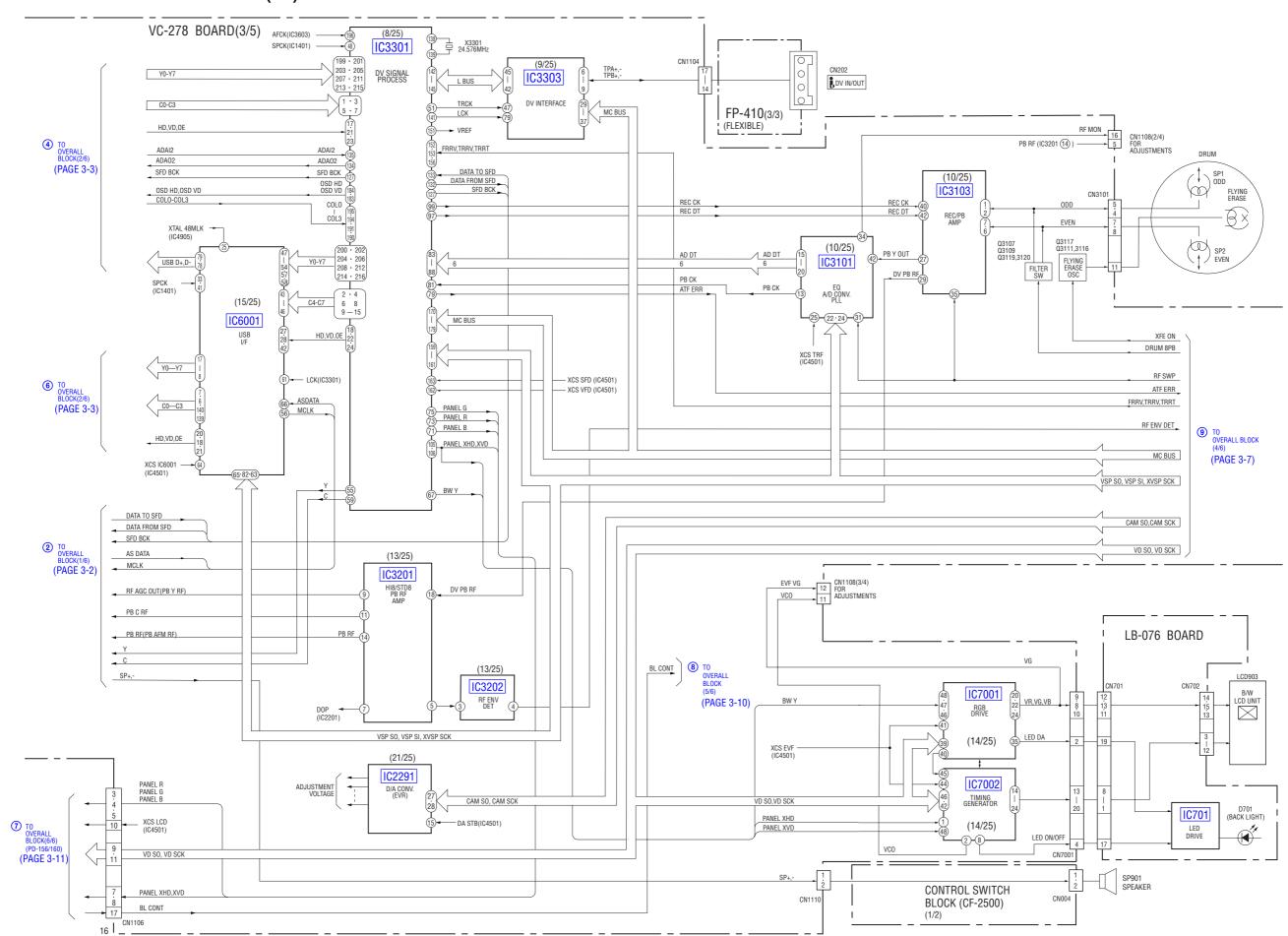
#### **3-2. OVERALL BLOCK DIAGRAM (2/6)** (): Number in parenthesis () indicates the division number of schematic diagram where the component is located.



3-3

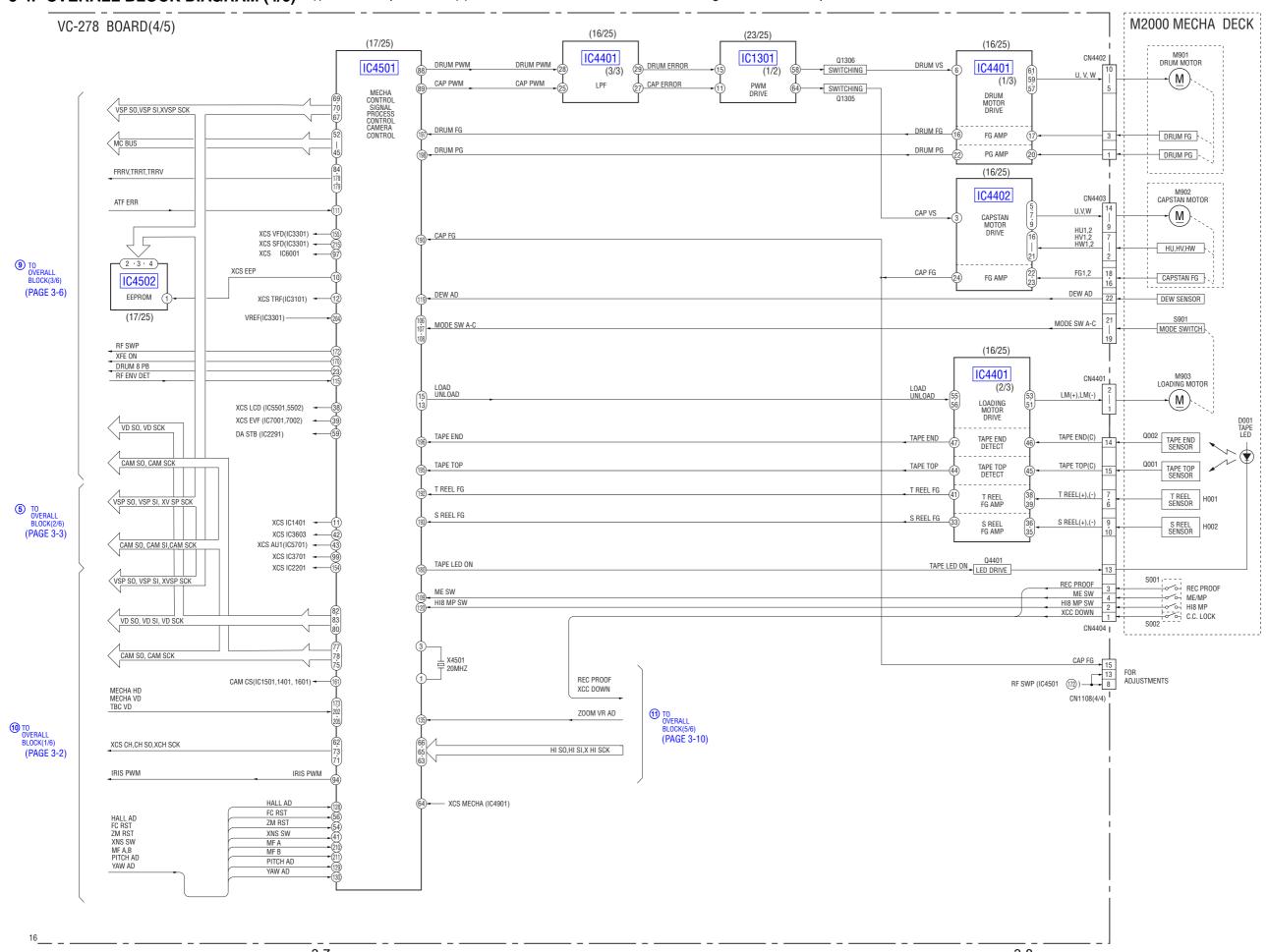


3-3. OVERALL BLOCK DIAGRAM (3/6) (): Number in parenthesis () indicates the division number of schematic diagram where the component is located.



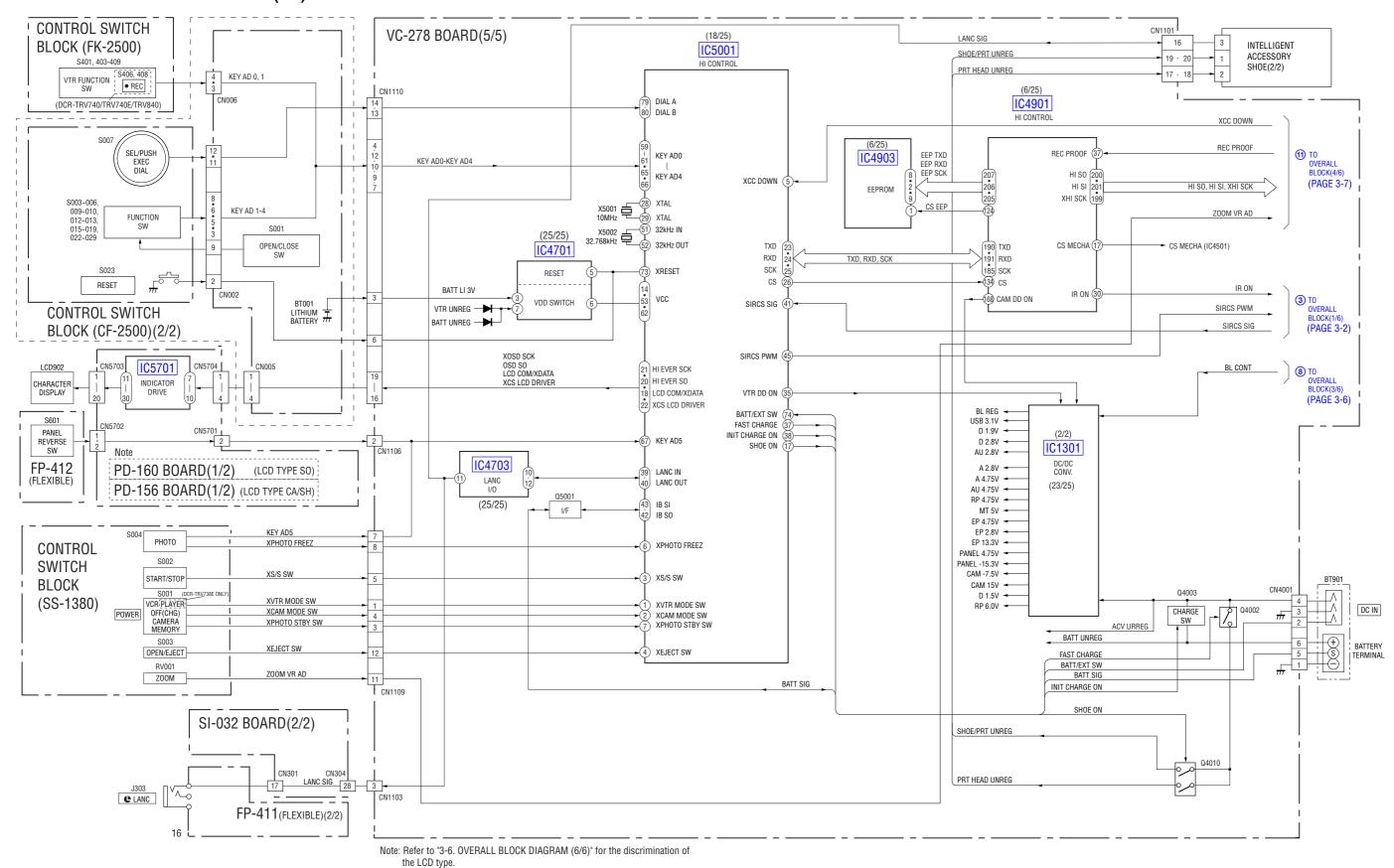


**3-4. OVERALL BLOCK DIAGRAM (4/6)** (): Number in parenthesis () indicates the division number of schematic diagram where the component is located.





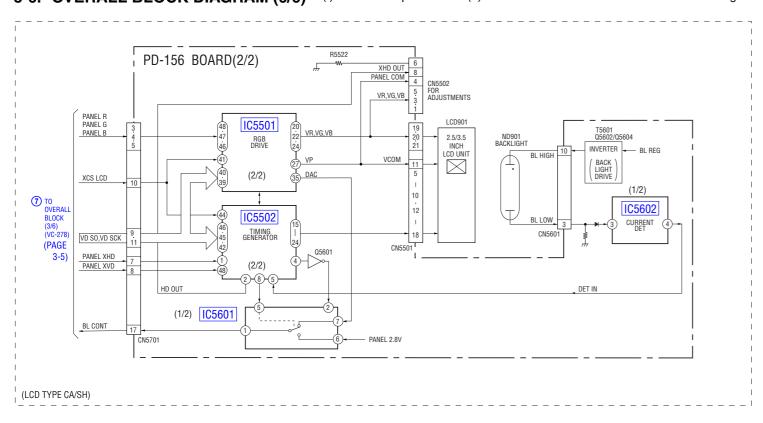
3-5. OVERALL BLOCK DIAGRAM (5/6) (): Number in parenthesis () indicates the division number of schematic diagram where the component is located.

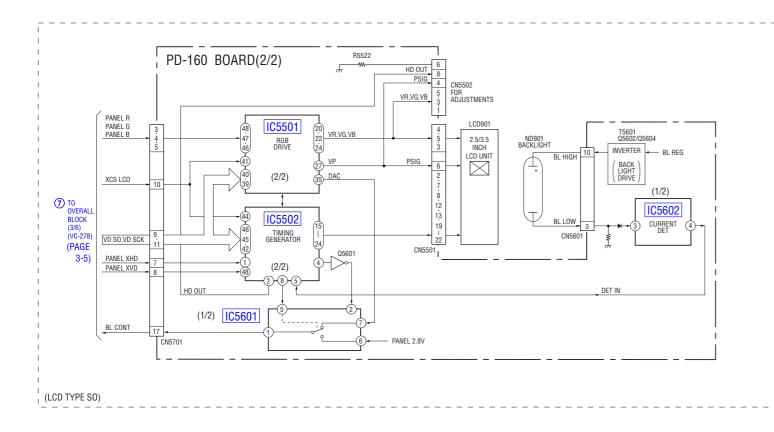


3-10



### 3-6. OVERALL BLOCK DIAGRAM (6/6) (): Number in parenthesis () indicates the division number of schematic diagram where the component is located.





Note: By measuring the resistor value between Pin (6) of CN5502 on PD-156/160 board and GND, the type of LCD can be discriminated.

2.2kΩ: LCD TYPE SH (2.5 inches, 123k) DCR-TRV738E/TRV740E (\*1)

6.8kΩ: LCD TYPE CA (3.5 inches, 123k) DCR-TRV840

22k $\Omega$ : LCD TYPE SO (2.5 inches, 61k) DCR-TRV740/TRV740E (\*2) 47k $\Omega$ : LCD TYPE SO (3.5 inches, 123k) DCR-TRV840 \*1: AEP/EE/NE/RU model, \*2: E/AUS/HK/CH/JE model

#### Abbreviation

EE : East European model

NE : North European model

RU : Russian model

AUS : Australian model

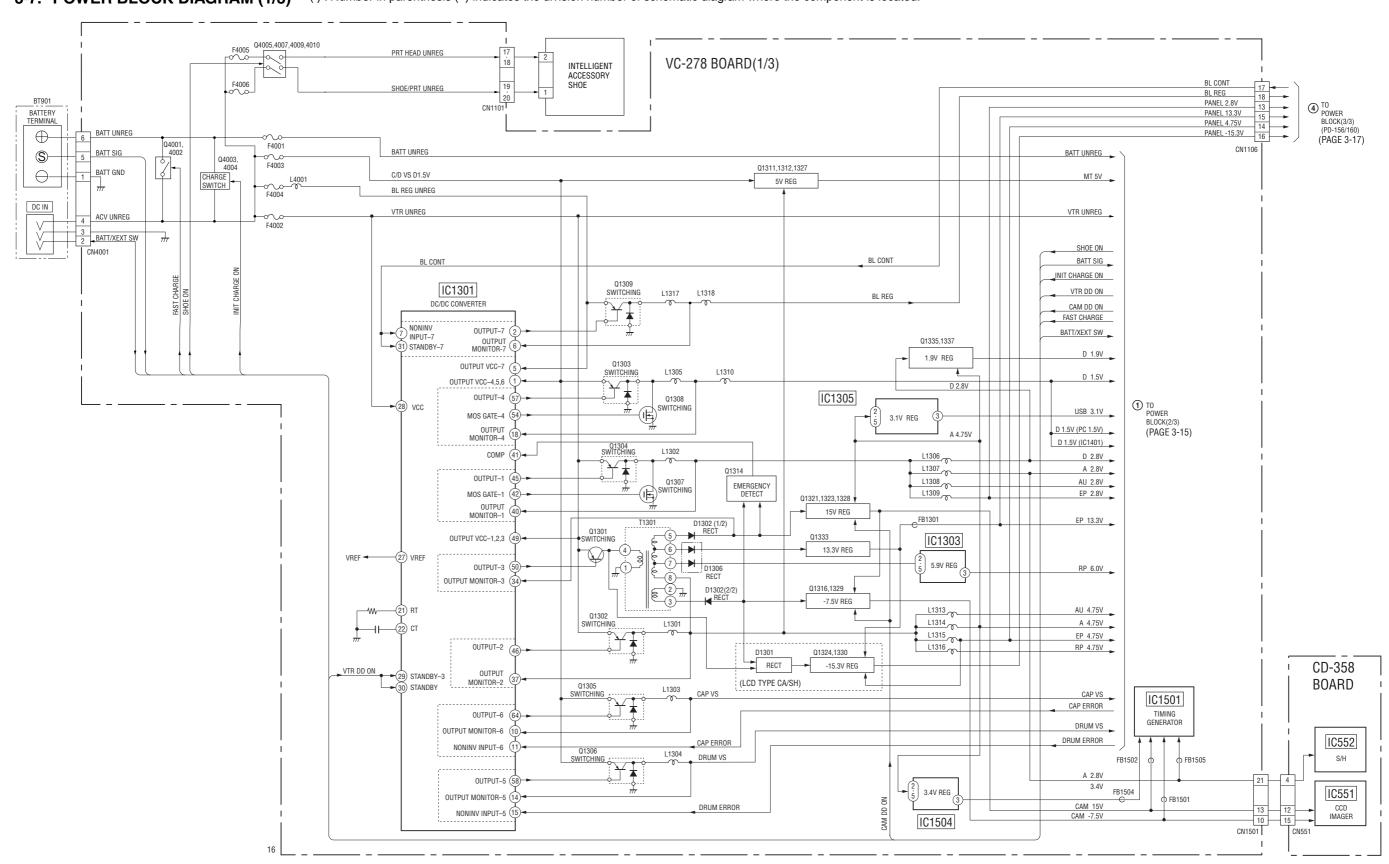
HK : Hong Kong model

CH : Chinese model JE : Tourist model

3-12 3-11



**3-7. POWER BLOCK DIAGRAM (1/3)** (): Number in parenthesis () indicates the division number of schematic diagram where the component is located.

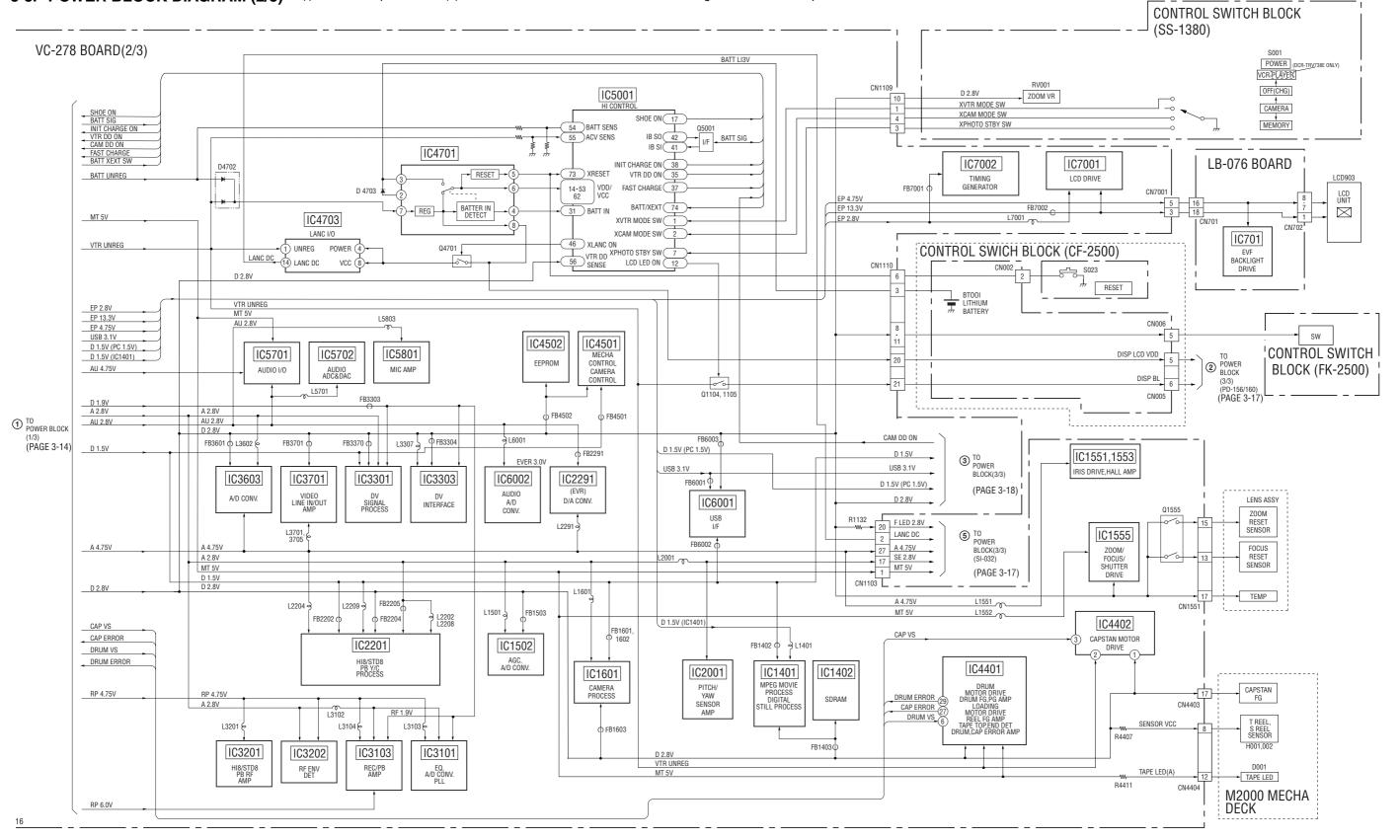


Note: Refer to "3-6. OVERALL BLOCK DIAGRAM (6/6)" for the discrimination of the LCD type.

3-13



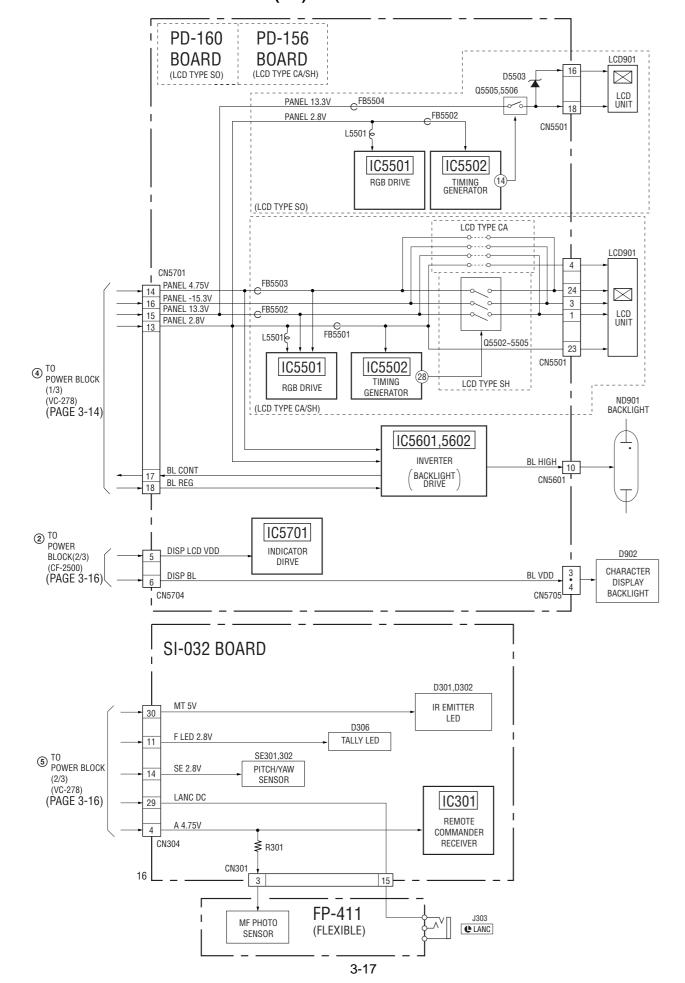
3-8. POWER BLOCK DIAGRAM (2/3) (): Number in parenthesis () indicates the division number of schematic diagram where the component is located.

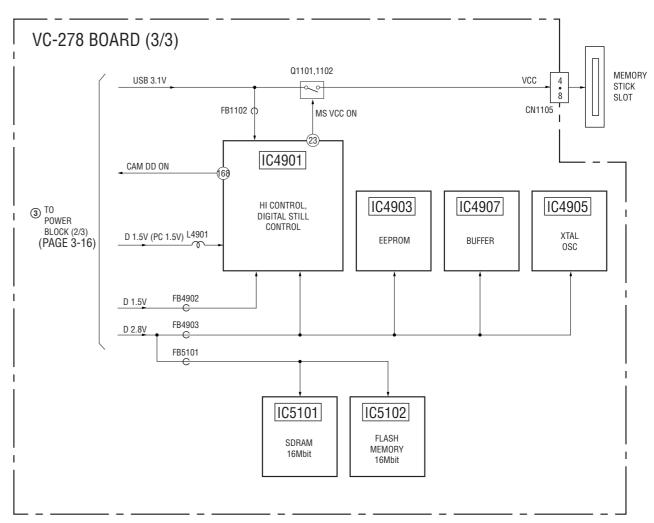


3-15



#### **3-9. POWER BLOCK DIAGRAM (3/3)** (): Number in parenthesis () indicates the division number of schematic diagram where the component is located.





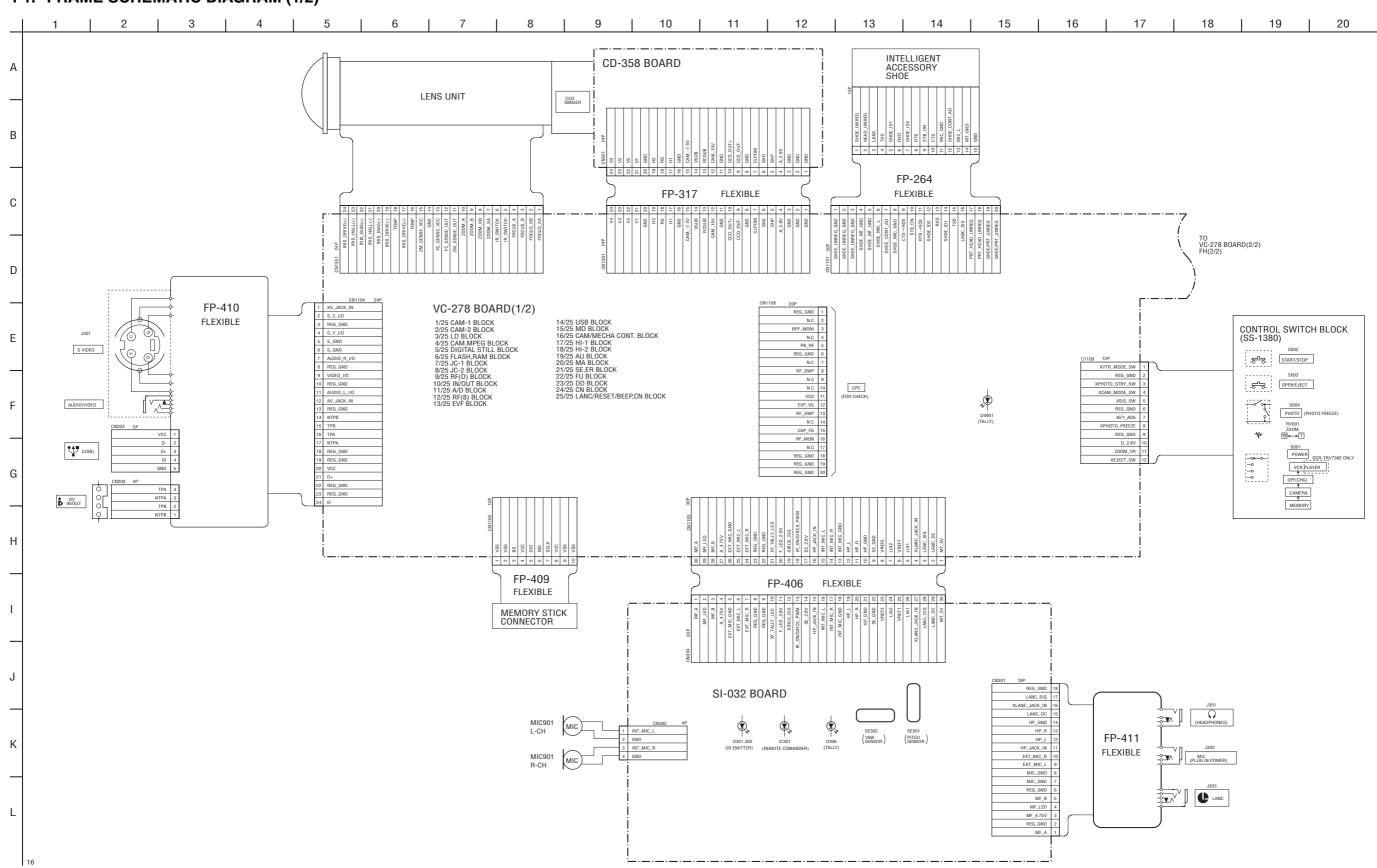
Note: Refer to "3-6. OVERALL BLOCK DIAGRAM (6/6)" for the discrimination of the LCD type.



#### 4-3. PRINTED WIRING BOARDS

# SECTION 4 PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

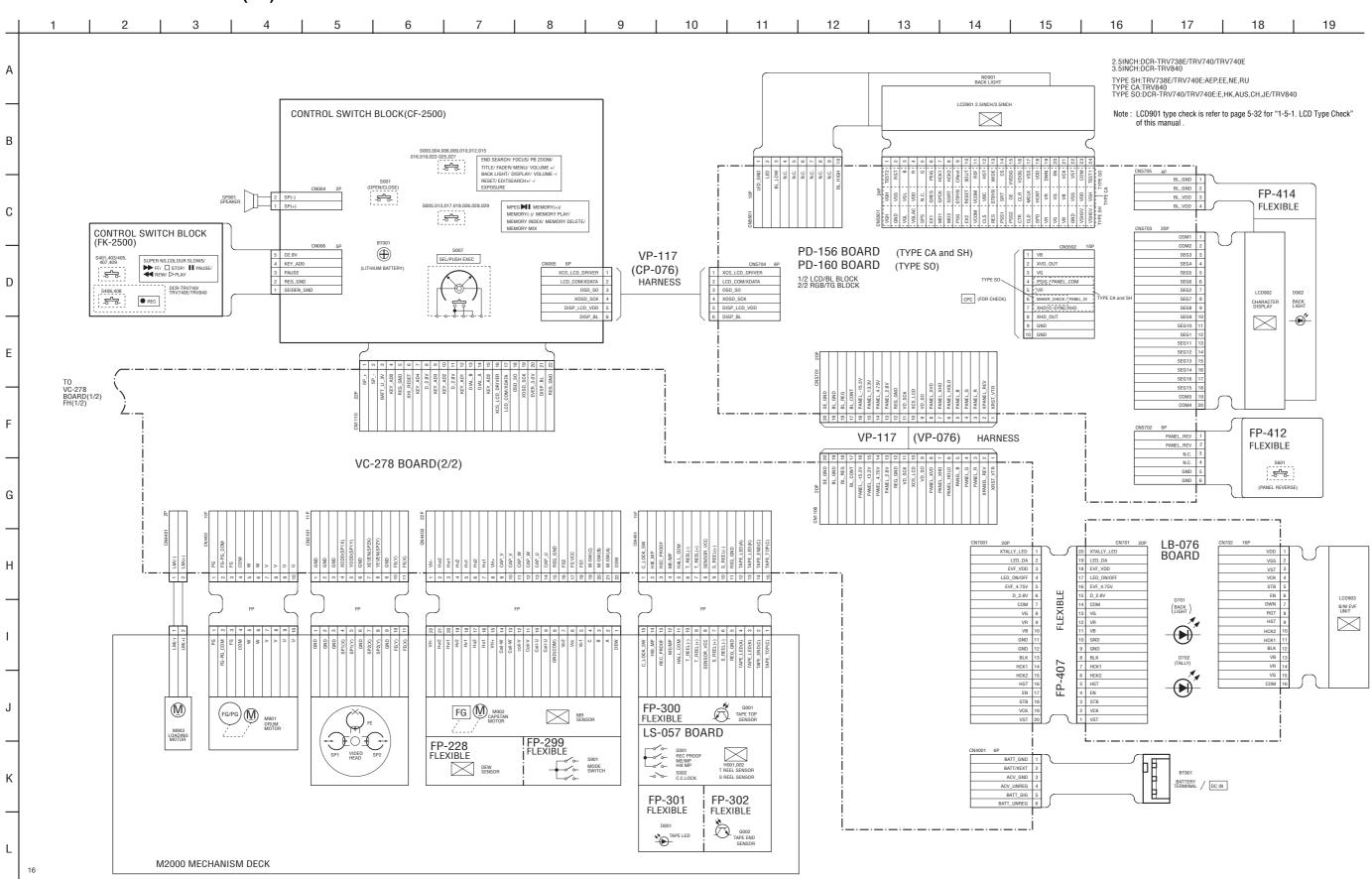
#### 4-1. FRAME SCHEMATIC DIAGRAM (1/2)





4-3. PRINTED WIRING BOARDS

#### FRAME SCHEMATIC DIAGRAM (2/2)



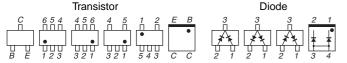


## THIS NOTE IS COMMON FOR WIRING BOARDS AND SCHEMATIC DIAGRAMS (In addition to this, the necessary note is printed in each block)

#### (For printed wiring boards)

Pattern from the side which enables seeing. (The other layers' patterns are not indicated.)

- Through hole is omitted.
- Circled numbers refer to waveforms.
- There are few cases that the part printed on diagram isn't mounted in this model.
- Chip parts.

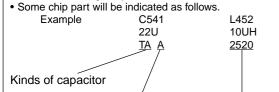


#### (For schematic diagrams)

- All capacitors are in μF unless otherwise noted. p: pF.
   50V or less are not indicated except for electrolytics and tantalums.
- Chip resistors are 1/10W unless otherwise noted.
- $k\Omega$ =1000Ω,  $M\Omega$ =1000 $k\Omega$ .
- · Caution when replacing chip parts.

New parts must be attached after removal of chip. Be careful not to heat the minus side of tantalum capacitor, Be-

Be careful not to heat the minus side of tantalum capacitor, E cause it is damaged by the heat.



Temperature characteristics External dimensions (mm)

 Constants of resistors, capacitors, ICs and etc with XX indicate that they are not used.

In such cases, the unused circuits may be indicated.

- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- Signal name

 $XEDIT \rightarrow \overline{EDIT}$  PB/XREC  $\rightarrow$  PB/REC

• \_ : non flammable resistor

• + : fusible resistor

• \_\_\_\_\_ : panel designation

• ---- : B+ Line \*

• -- : B- Line \*

E⇒ : IN/OUT direction of (+,-) B LINE. \*

• adjustment for repair.

- Circled numbers refer to waveforms. \*
- \* Indicated by the color red.

#### Note:

The components identified by mark  $\triangle$  or dotted line with mark  $\triangle$  are critical for safety. Replace only with part number specified.

#### Note:

Les composants identifiés par une marque  $\triangle$  sont critiques pour la sécurité.

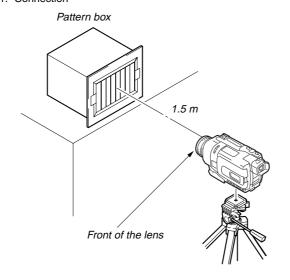
Ne les remplacer que par une pièce portant le numéro spécifié.

#### (Measuring conditions voltage and waveform)

Voltages and waveforms are measured between the measurement points and ground when camera shoots color bar chart of pattern box. They are reference values and reference waveforms.

(VOM of DC 10 M $\Omega$  input impedance is used.).

- Voltage values change depending upon input impedance of VOM used.) \*
- 1. Connection



Adjust the distance so that the output waveform of Fig. a and the Fig. b can be obtain.

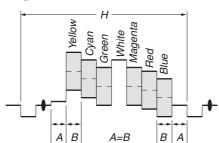
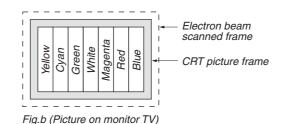


Fig. a (Video output terminal output waveform)



When indicating parts by reference number, please include the board name.



Link	
CD-358 BOARD (CCD IMAGER)	
LB-076 BOARD (EVF, BACK LIGHT)	
SI-032 BOARD (STEADY SHOT, LASER LINK)	
CONTROL SWITCH BLOCK (CF-2500)	
PD-156 BOARD (1/2) (Cha, display drive, back light)	
• PD-156 BOARD (2/2) (LCD DRIVE, TG)	
PD-160 BOARD (1/2) (CHA, DISPLAY DRIVE, BACK LIGHT)	
• PD-160 BOARD (2/2) (LCD DRIVE, TG)	
LS-057, FP-228, FP-299, FP-300, FP-302, FP-301 FLEXIBLE BOARDS	
• FP-410 FLEXIBLE BOARD (AV TERMINAL)	
CONTROL SWITCH BLOCK (SS-1380)	
COMMON NOTE FOR SCHEMATIC DIAGRAMS	• WAVEFORMS



4-2. SCHEMATIC DIAGRAMS CD-358 BOARD LB-076 BOARD

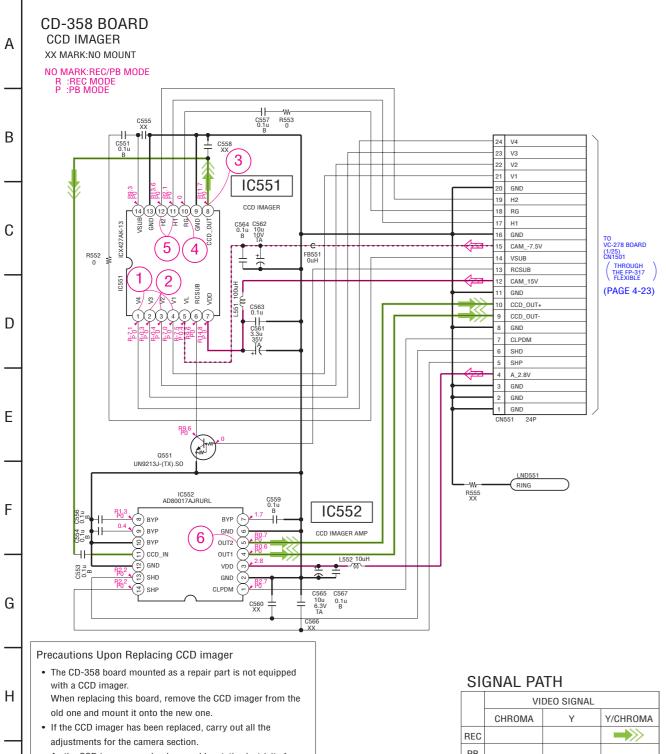
6

### 4-2. SCHEMATIC DIAGRAMS

For Schematic Diagram

• Refer to page 4-73 for printed wiring board.

• Refer to page 4-91 for waveforms. 3



6 LB-076 BOARD **EVF,BACKLIGHT** NO MARK:REC/PB MODE D701 NSCW100-T38 BACKLIGHT IC701 UP04601008S0 LED DRIVE В XTALLY\_LED : LED\_DA EVF\_VDD LED\_ON/OFF EVF\_4.75V D\_2.8V COM С VC-278 BOARD(14/25) CN7001 VG VR (PAGE 4-50) VB GND GND LCD903 BLK B/W EVF UNIT HCK1  $\boxtimes$ HCK2 HST D STB STB  $\dashv\vdash$ VSS 16

SIGNAL PATH

CHROMA

REC

PB

VIDEO SIGNAL

 $\Rightarrow$ 

Y/CHROMA

 As the CCD imager may be damaged by static electricity from its structure, handle it carefully like for the MOS IC. In addition, ensure that the receiver is not covered with dusts nor exposed to strong light.

16

	VII	DEO SIGNAL	
	CHROMA	Υ	Y/CHROMA
REC			<b>→</b> >>>
РВ			

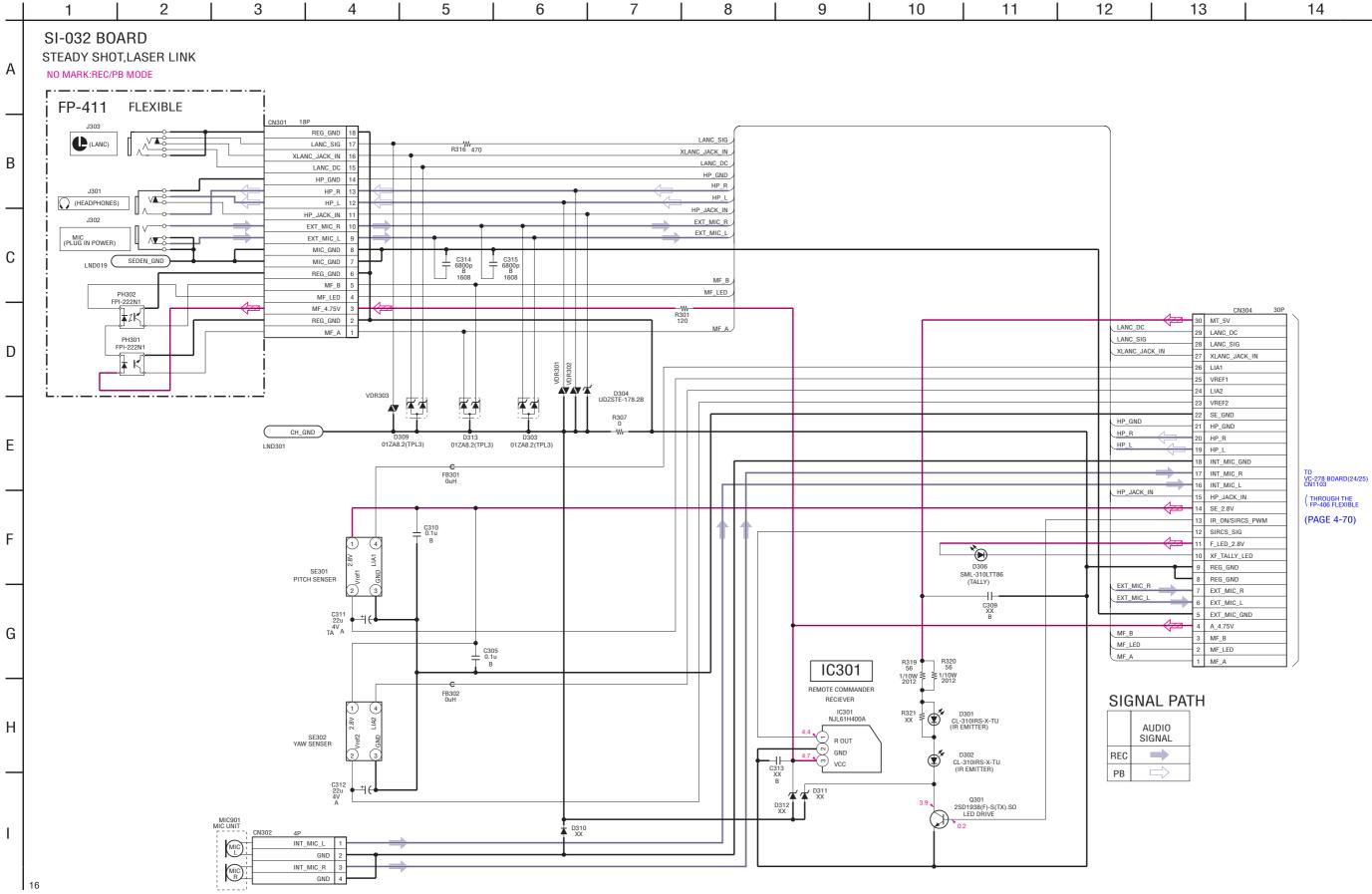
CD-358/LB-076



SI-032 PRINTED WIRING BOARD

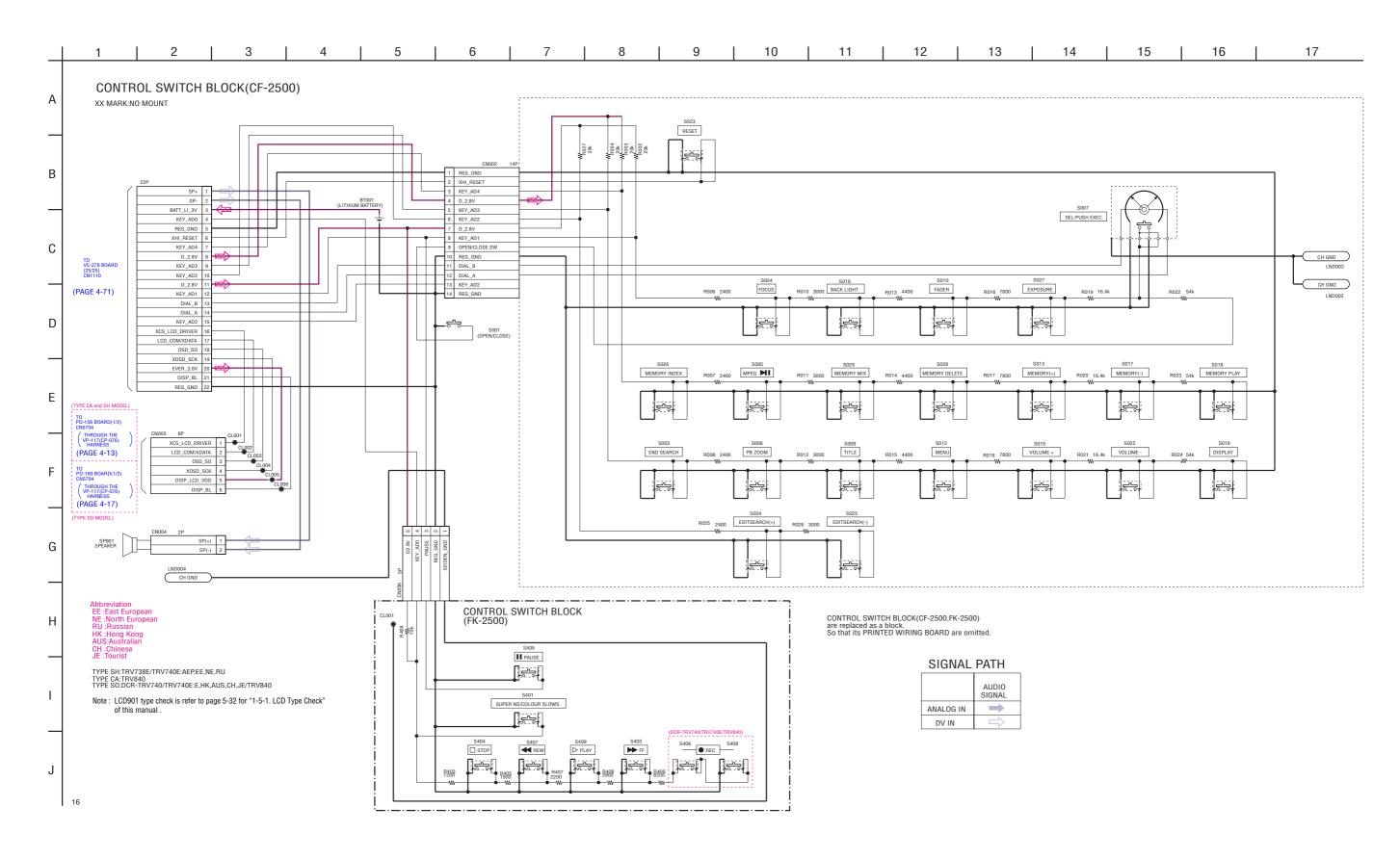
For Schematic Diagram

• Refer to page 4-75 for printed wiring board.





4-3. PRINTED WIRING BOARDS



4-11 CONTROL SWITCH BLOCK (CF-2500)

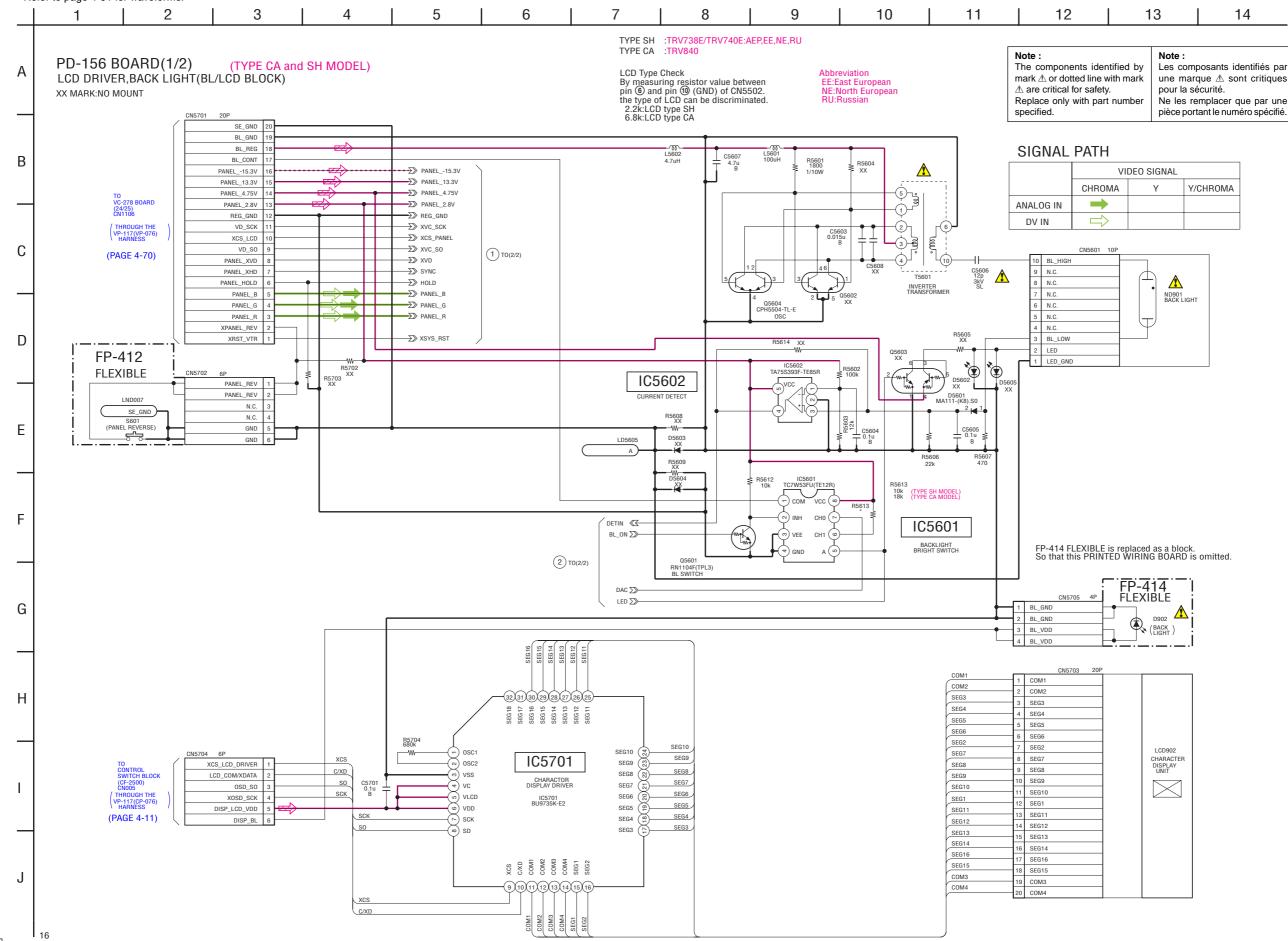


PD-156 BOARD SIDE A

PD-156 BOARD SIDE B

4-14

- Refer to page 4-79 for printed wiring board.
- Refer to page 4-91 for waveforms.

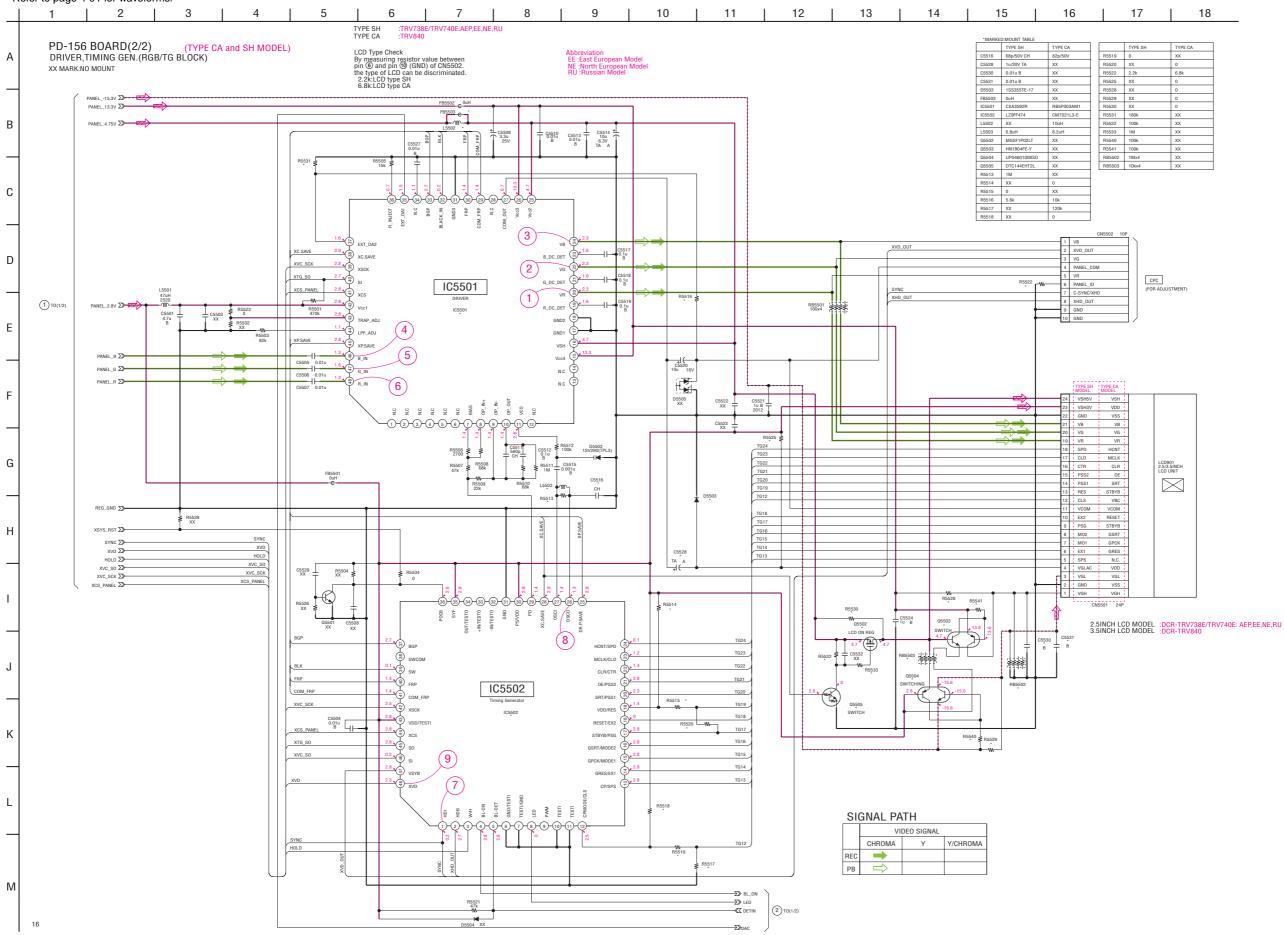




PD-156 BOARD SIDE A

PD-156 BOARD SIDE B

- Refer to page 4-79 for printed wiring board.
- Refer to page 4-91 for waveforms.



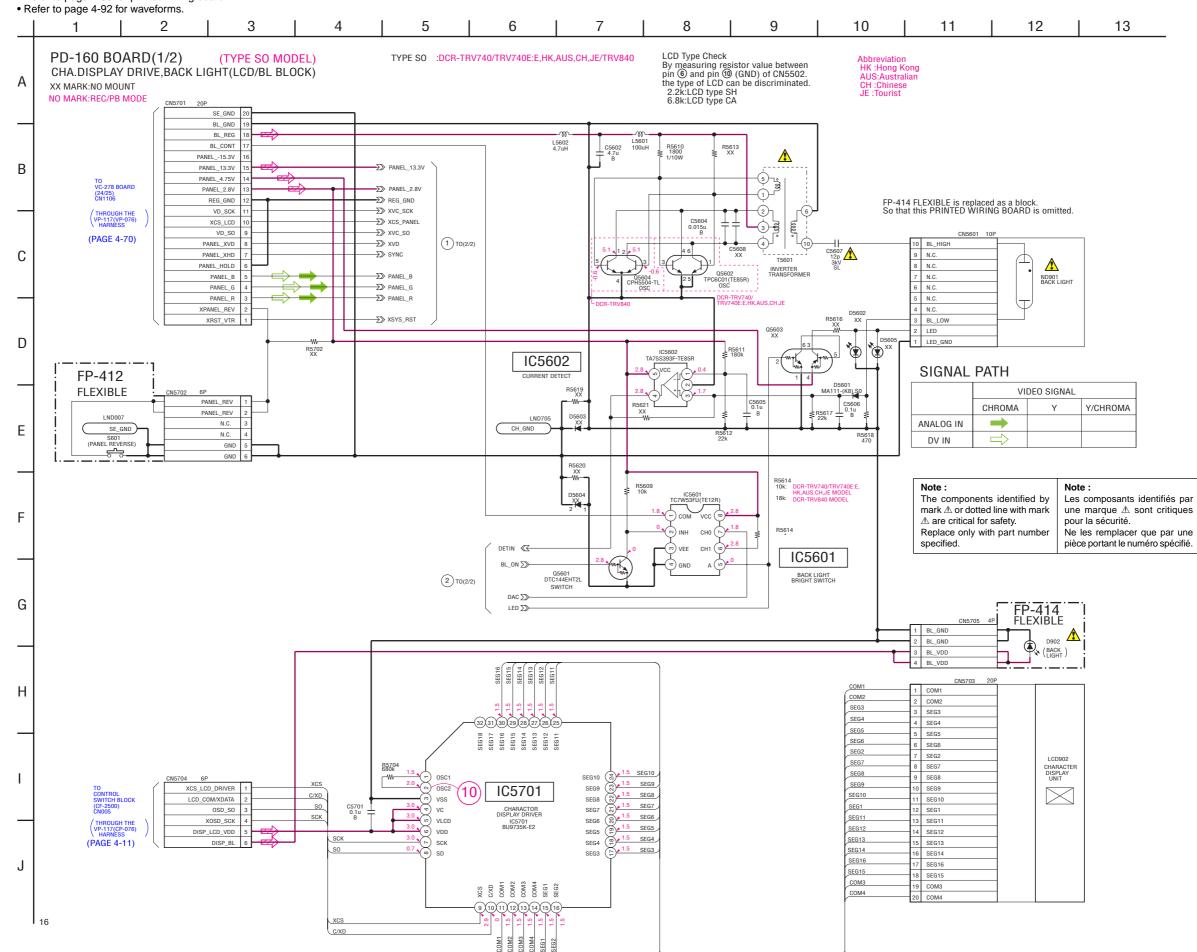


PD-160 BOARD SIDE A

PD-160 BOARD SIDE B

4-18

- Refer to page 4-83 for printed wiring board.

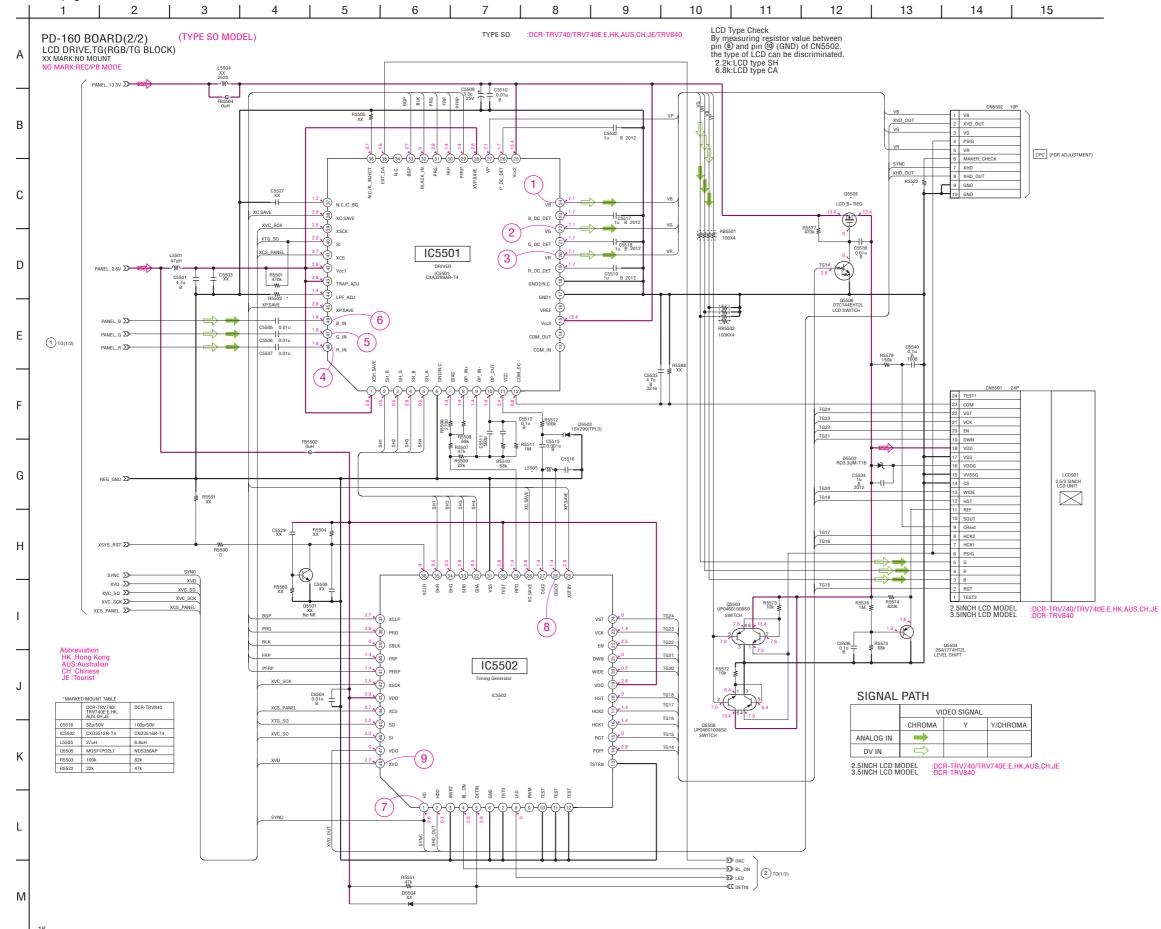




PD-160 BOARD SIDE A

PD-160 BOARD SIDE B

- Refer to page 4-83 for printed wiring board.
- Refer to page 4-92 for waveforms.



I LS-057 BOARD

T REEL

S901 MODE SWITCH

DEW SENSOR

FP-299

FP-228

FLEXIBLE

FLEXIBLE



FP-302

| FLEXIBLE

Q002 TAPE END SENSOR

FP-301

FLEXIBLE

D001 TAPE LED

4-2. SCHEMATIC DIAGRAMS

MECHA

CONTROL

BLOCK

VC-278

BOARD

(16/25)

CN4404

MECHA

BLOCK

VC-278

(16/25)

CN4403 (PAGE4-53)

of LEVEL 3

CONTROL

(PAGE4-53)

of LEVEL 3

! FP-300

**FLEXIBLE** 

Q001 TAPE TOP SENSOR

IME/MP

THIS MP

- - -S001

S002 C.C. LOCK

MR SENSOR

TAPE TOP (C)

TAPE END (C)

TAPE LED (K)

TAPE LED (A) GND

S REEL (-)

S REEL (+)

SENSOR (Vcc)

T REEL (+)

T REEL (-)

HALL COM

REC PROOF

C LOCK SW

Hi8 MP

FG1 (Vo2)

GND (COM)

COIL-U

COIL-U

COIL-W

COIL-W

COIL-V

COIL-V

VH+

HU 1

HU 2

HV 2

HW 1

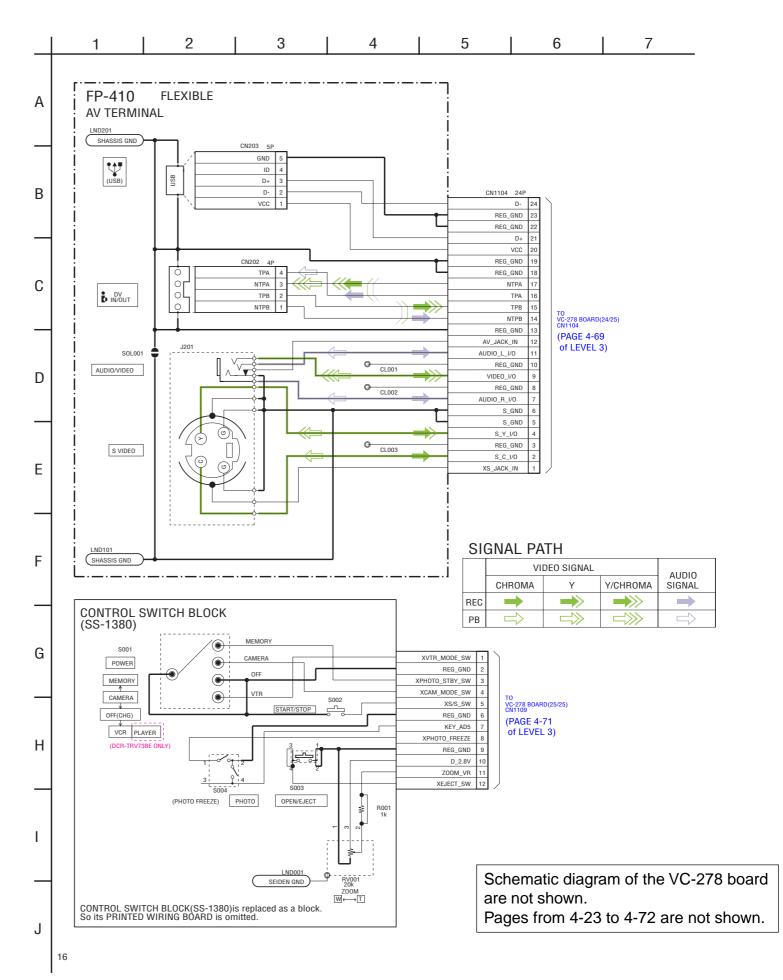
HW 2

VH-

VCC FG2 (Vo1)

ME/MP

M2000 MECHANISM DECK FP-410 FLEXIBLE BOARD





## 4-3. PRINTED WIRING BOARDS

### Link

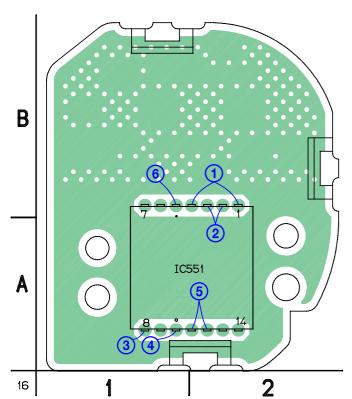
• CD-358 BOARD	• PD-156 BOARD (SIDE B)
• LB-076 BOARD	• PD-160 BOARD (SIDE A)
• SI-032 BOARD	PD-160 BOARD (SIDE B)
• FP-411 FLEXIBLE BOARD	• FP-412 FLEXIBLE BOARD
LS-057, FP-228, FP-299, FP-300, FP-302, FP-301 FLEXIBLE BOARDS	
• FP-410 FLEXIBLE BOARD	
• PD-156 BOARD (SIDE A)	

COMMON NOTE FOR PRINTE	<ul><li>WAVEFORMS</li></ul>	
MOUNTED PARTS LOCATION	<ul> <li>CIRCUIT BOARDS LOCATION</li> </ul>	• FLEXIBLE BOARDS LOCATION

4-3. PRINTED WIRING BOARDS

**MOUNTED PARTS LOCATION** 

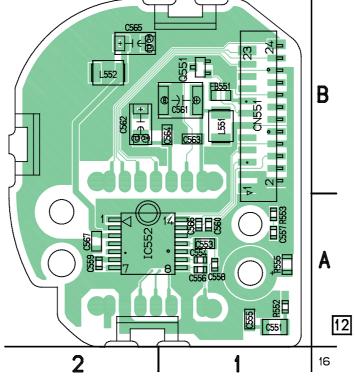
4-3. PRINTED WIRING BOARDS CD-358 (CCD IMAGER) PRINTED WIRING BOARD CD-358 BOARD (SIDE A)



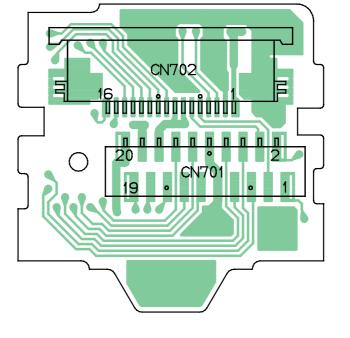
· Uses unleaded solder.

CD-358 BOARD

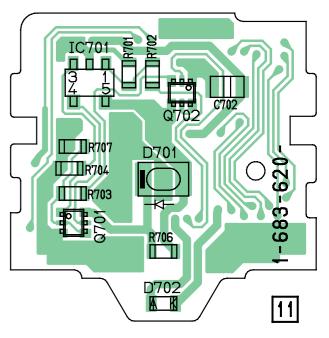
(SIDE B)



LB-076 (EVF, BACK LIGHT) PRINTED WIRING BOARD LB - 076 BOARD (SIDE A)



LB-076 BOARD (SIDE B)



#### For printed wiring boards

- Refer to page 4-96 for parts location.
- This board is eight-layer print board. However, the patterns of layers two and seven have not been included in the diagram.

There are a few cases that the part printed on this diagram isn't mounted in this model.

#### For printed wiring boards

- Refer to page 4-96 for parts location.
- This board is eight-layer print board. However, the patterns of layers two and seven have not been included in the diagram.

There are a few cases that the part printed on this diagram isn't mounted in this model.

4-73 CD-358/LB-076



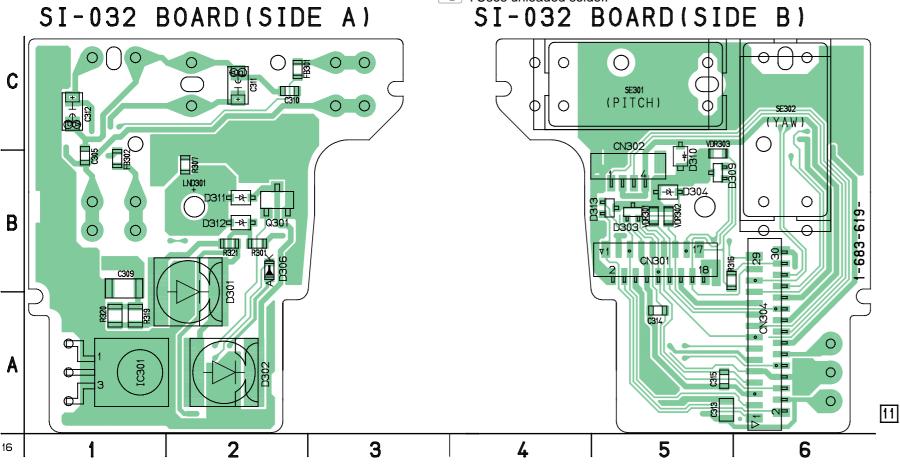
• **!** : Uses unleaded solder.

4-3. PRINTED WIRING BOARDS

**MOUNTED PARTS LOCATION** 

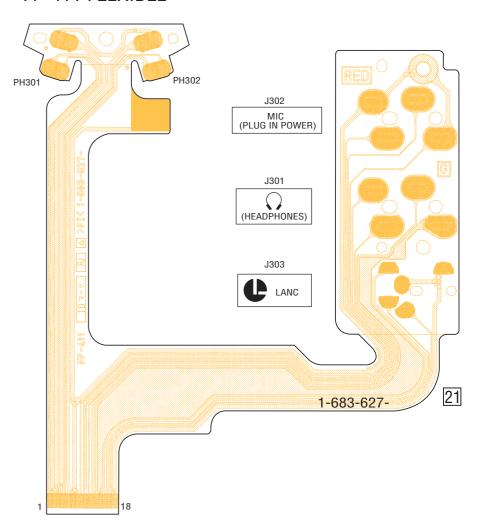
SI-032 (STEADY SHOT, LASER LINK) PRINTED WIRING BOARD

SI-032 BOARD(SIDE A)



#### **FP-411 FLEXIBLE BOARD**

#### FP-411 FLEXIBLE



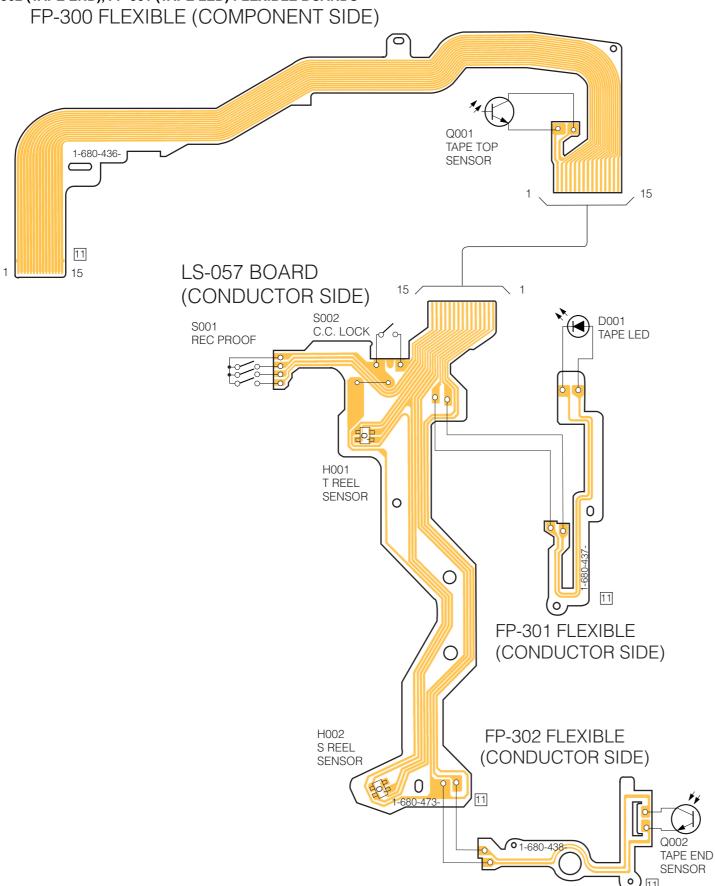
- For printed wiring boards
   Refer to page 4-96 for parts location.
- This board is six-layer print board. However, the patterns of layers two and five have not been included in

There are a few cases that the part printed on this diagram isn't mounted in this model.



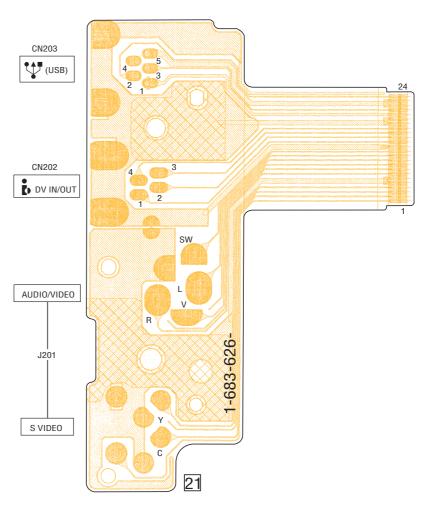


## LS-057 (S/T REEL SENSOR), FP-228 (DEW SENSOR), FP-299 (MODE SWITCH), FP-300 (TAPE TOP), FP-302 (TAPE END), FP-301 (TAPE LED) FLEXIBLE BOARDS



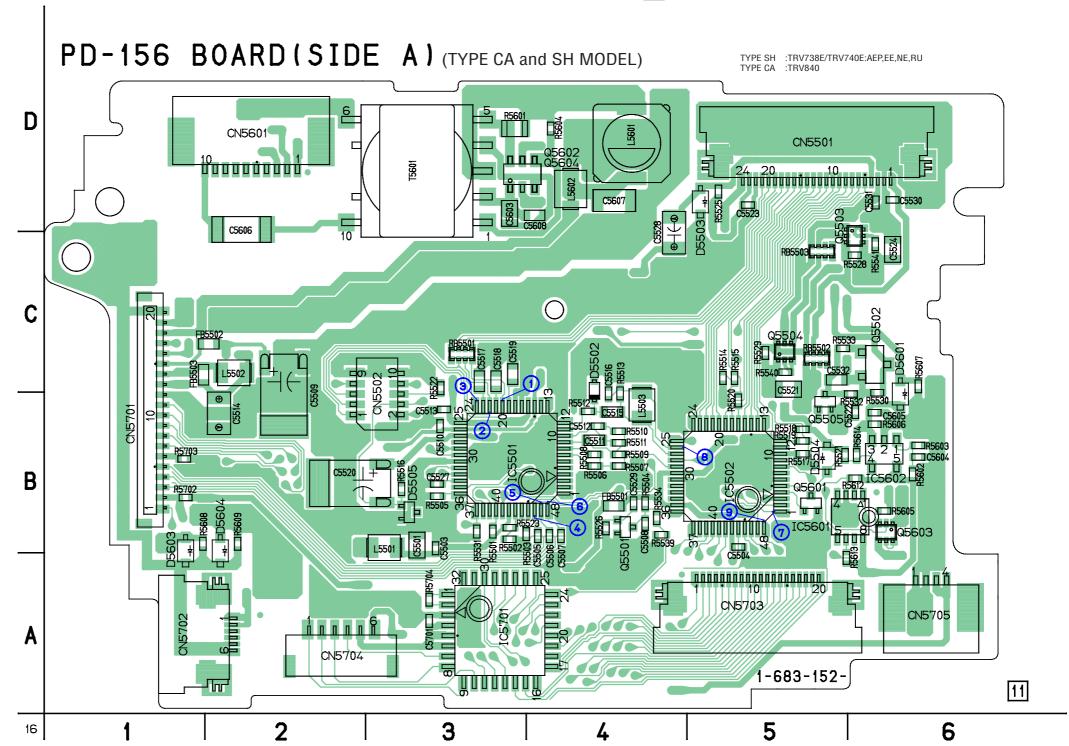
#### FP-410 FLEXIBLE BOARD

#### FP-410 FLEXIBLE



PD-156 (LCD DRIVER, BACKLIGHT, DRIVER, TIMING GENERATOR) PRINTED WIRING BOARD

• **4** : Uses unleaded solder.



#### For printed wiring boards

- Refer to page 4-96 for parts location.
- This board is six-layer print board. However, the patterns of layers two and five have not been included in the diagram.

There are a few cases that the part printed on this diagram isn't mounted in this model.

PD-156 4-80





• **!** : Uses unleaded solder. PD-156 BOARD(SIDE B) (TYPE CA and SH MODEL) TYPE SH :TRV738E/TRV740E:AEP,EE,NE,RU TYPE CA :TRV840 D5605 +>+ D D5602 → LD5605 В A 1-683-152-11 16 10 12 11 8

4-81 4-82 **PD-156** 



4-3. PRINTED WIRING BOARDS

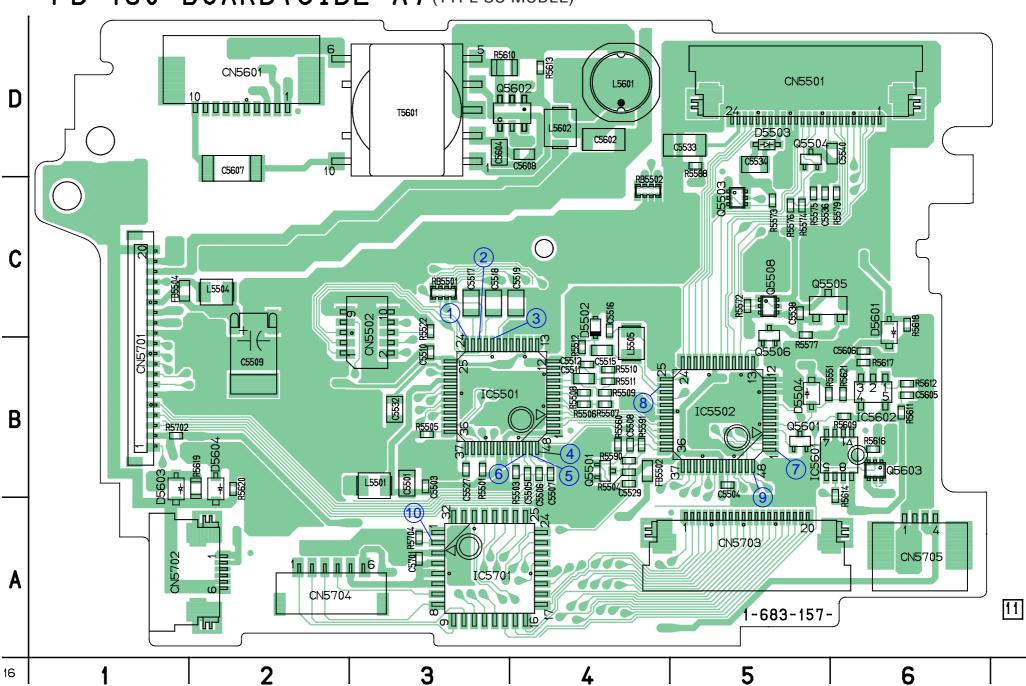
**MOUNTED PARTS LOCATION** 

TYPE SO :DCR-TRV740/TRV740E:E,HK,AUS,CH,JE/TRV840

PD-160 (CHA, DISPLAY DRIVE, BACK LIGHT, LCD DRIVE, TG) PRINTED WIRING BOARD

### • **4** : Uses unleaded solder.





#### For printed wiring boards

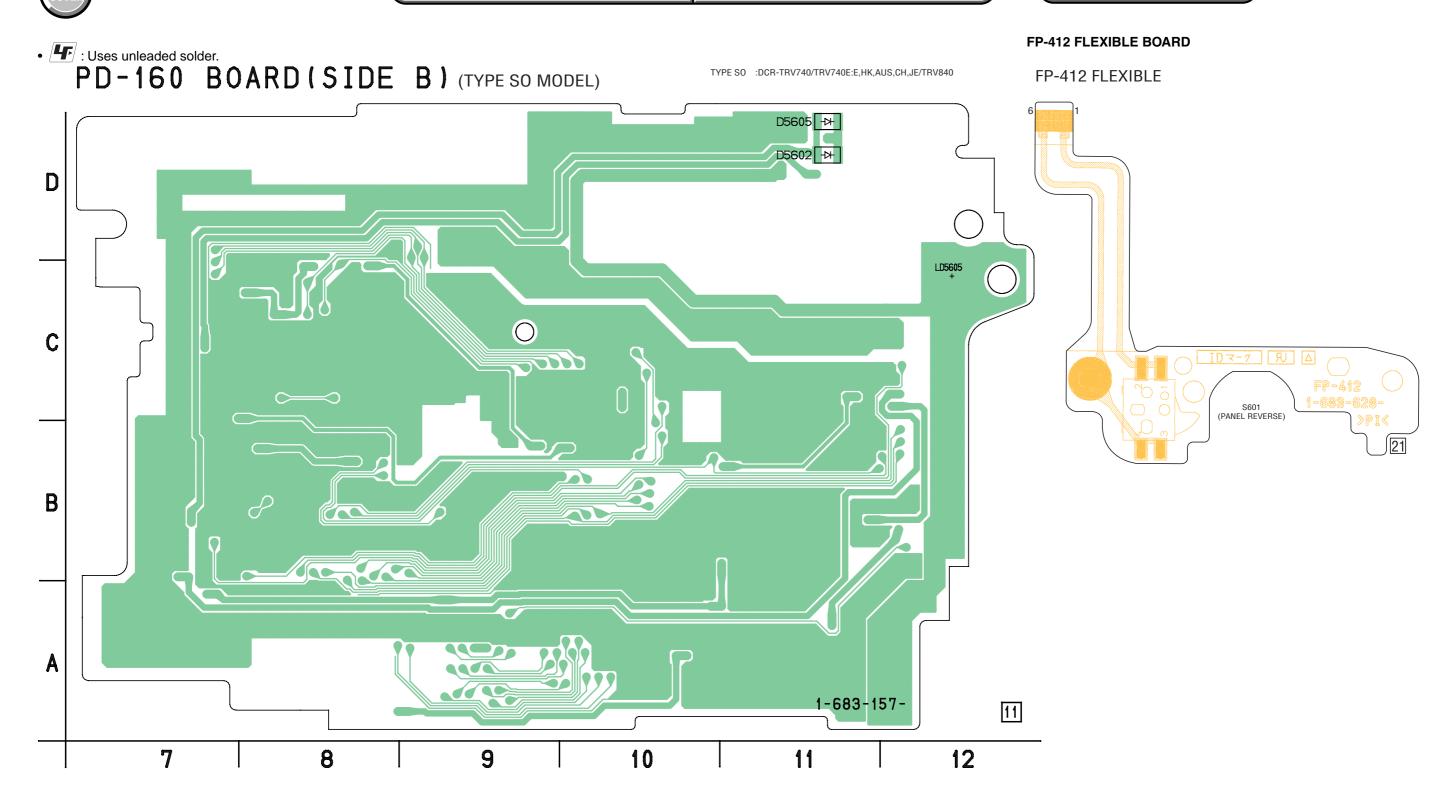
- Refer to page 4-96 for parts location.
- This board is six-layer print board. However, the patterns of layers two and five have not been included in the diagram.

There are a few cases that the part printed on this diagram isn't mounted in this model.

PD-160 4-83

4-3. PRINTED WIRING BOARDS

#### **MOUNTED PARTS LOCATION**



Printed wiring board of the VC-278 board are not shown. Pages from 4-87 to 4-90 are not shown.

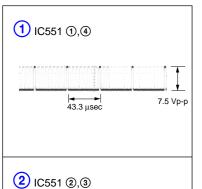
4-85 4-86 **PD-160/FP-412** 



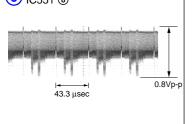
4-3. PRINTED WIRING BOARDS

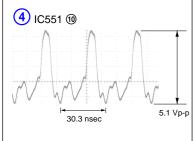
#### 4-4. WAVEFORMS

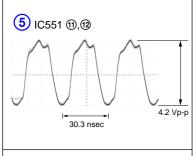
#### CD-358 BOARD CAMERA REC

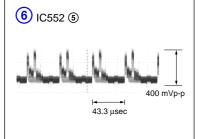




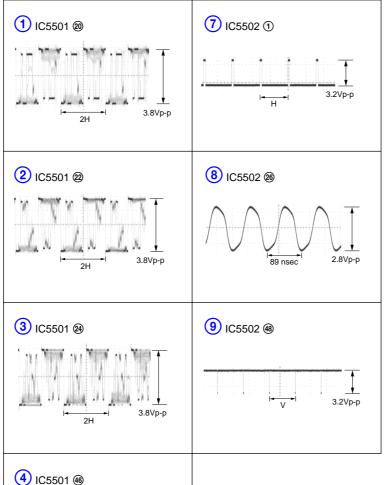


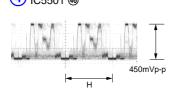


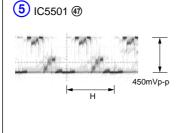


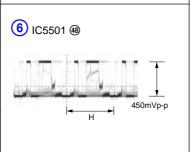


#### PD-156 BOARD

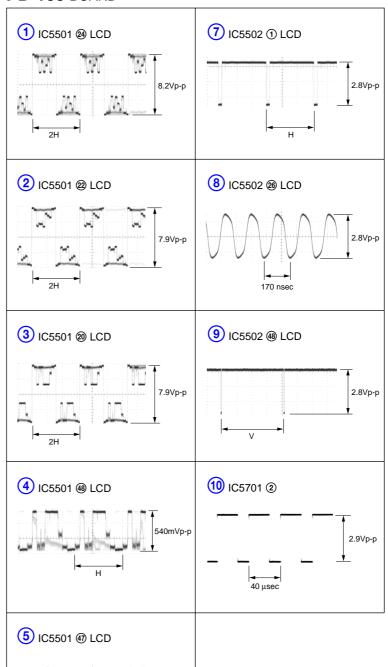


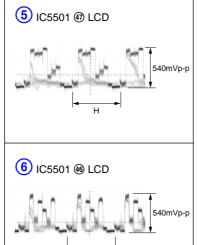






#### PD-160 BOARD





Waveforms of the VC-278 board are not shown. Pages from 4-93 to 4-95 are not shown.



#### 4-3. PRINTED WIRING BOARDS

no mark : side A

#### 4-5. MOUNTED PARTS LOCATION

. 0.	IIIOOITI EB	TAITIO LOOKIION			* m	ark : side B						
CD-35	8 BOARD	SI-032 BOARD	ARD	PD-160 BOARD								
* C551	A-1	C305 B-1	C5501 B-3	L5601 D-4	C5501 B-3	Q5501 B-4						
* C553	A-1	C309 B-1	C5503 B-3	L5602 D-4	C5503 B-3	Q5503 C-5						
* C554	A-1	C310 C-2	C5504 B-5		C5504 B-5	Q5504 D-5						
* C555	A-1	C311 C-2	C5505 B-4	Q5501 B-4	C5505 B-4	Q5505 C-5						
* C556	A-1	C312 C-1 * C313 A-5	C5506 B-4	Q5502 C-6 Q5503 C-6	C5506 B-4	Q5506 B-5 Q5508 C-5						
* C557	A-1	* C313 A-5 * C314 A-5	C5507 B-4 C5508 B-4	Q5503 C-6 Q5504 C-5	C5507 B-4 C5508 B-4	Q5508 C-5 Q5601 B-5						
* C558	A-1	* C315 A-5	C5509 B-2	Q5505 B-5	C5509 B-2	Q5602 D-3						
* C559 * C560	A-2 A-1	0010 710	C5510 B-3	Q5601 B-5	C5510 B-3	Q5603 B-6						
* C561	B-1	* CN301 B-5	C5511 B-4	Q5602 D-4	C5511 B-4							
* C562	B-2	* CN302 B-5	C5512 B-4	Q5603 B-6	C5512 B-4	R5501 B-3						
* C563	B-1	* CN304 A-6	C5513 B-3	Q5604 D-4	C5515 B-4	R5503 B-4						
* C564	B-1	D201 A 0	C5514 B-2	DEE04 D 0	C5516 C-4	R5504 B-4						
* C565	B-2	D301 A-2 D302 A-2	C5515 B-4 C5516 B-4	R5501 B-3 R5502 B-3	C5517 C-3 C5518 C-3	R5505 B-3 R5506 B-4						
* C566	A-1	* D303 B-5	C5517 C-3	R5503 B-4	C5519 C-4	R5507 B-4						
* C567	A-2	* D304 B-5	C5518 C-3	R5504 B-4	C5527 B-3	R5508 B-4						
* CN551	B-1	D306 B-2	C5519 C-3	R5505 B-3	C5529 B-4	R5509 B-4						
. 014001	ו-ט	* D309 B-5	C5520 B-2	R5506 B-4	C5532 B-3	R5510 B-4						
* FB551	B-1	* D310 B-5	C5521 C-5	R5507 B-4	C5533 D-5	R5511 B-4						
		D311 B-2	C5522 B-6	R5508 B-4	C5534 D-5	R5512 B-4						
IC551	A-1	D312 B-2 * D313 B-5	C5523 D-5	R5509 B-4	C5536 C-5	R5522 C-3						
* IC552	A-2	* D313 B-5	C5524 C-6 C5527 B-3	R5510 B-4 R5511 B-4	C5538 C-5 C5540 D-6	R5551 B-6 R5560 B-4						
	D 4	FB301 C-2	C5528 D-4	R5512 B-4	C5602 D-4	R5572 C-5						
* L551 * L552	B-1	FB302 B-1	C5529 B-4	R5513 B-4	C5604 D-3	R5573 C-5						
* L002	B-2	. 5002 5 .	C5530 D-6	R5514 C-5	C5605 B-6	R5574 C-5						
* Q551	B-1	IC301 A-1	C5531 D-6	R5515 C-5	C5606 B-6	R5575 C-5						
0001			C5532 C-5	R5516 B-3	C5607 D-2	R5576 C-5						
* R552	A-1	Q301 B-2	C5603 D-3	R5517 B-5	C5608 D-4	R5577 B-5						
* R553	A-1	D004 D 0	C5604 B-6	R5518 B-5	C5701 A-3	R5579 C-6						
* R555	A-1	R301 B-2 R307 B-2	C5605 B-6 C5606 D-2	R5519 B-5 R5520 B-5	CN5501 D-5	R5588 D-5 R5590 B-4						
		* R316 B-5	C5607 D-4	R5521 B-5	CN5502 C-3	R5591 B-4						
		R319 A-1	C5608 D-4	R5522 C-3	CN5601 D-2	R5609 B-6						
		R320 A-1	C5701 A-3	R5523 B-3	CN5701 B-1	R5610 D-3						
		R321 B-2		R5525 D-5	CN5702 A-1	R5611 B-6						
			CN5501 D-5	R5526 B-4	CN5703 A-5	R5612 B-6						
		* SE301 C-5	CN5502 B-3	R5528 C-6	CN5704 A-2	R5613 D-4						
		* SE301 C-5 * SE302 C-6 * VDR301 B-5 * VDR302 B-5 * VDR303 B-5	CN5601 D-2	R5529 C-5	CN5705 A-6	R5614 B-6						
		* VDR301 B-5	CN5701 B-1 CN5702 A-1	R5530 B-6 R5531 B-3	D5502 C-4	R5616 B-6 R5617 B-6						
		* VDR301 B-3	CN5702 A-1	R5532 B-6	D5503 D-5	R5618 C-6						
		* VDR303 B-5	CN5704 A-2	R5533 C-5	D5504 B-5	R5619 B-2						
			CN5705 A-6	R5534 B-4	D5601 C-6	R5620 B-2						
				R5539 B-4	* D5602 D-11	R5621 B-6						
			D5502 B-4	R5540 C-5	D5603 B-1	R5702 B-1						
			D5503 D-5	R5541 C-6	* D5602 D-11 D5603 B-1 D5604 B-2 * D5605 D-11	R5704 A-3						
			D5504 B-5 D5505 B-3	R5601 D-3 R5602 B-6	* D5605 D-11	RB5501 C-3						
			D5601 C-6	R5603 B-6	FB5502 B-4	RB5502 C-4						
			* D5602 D-11	R5604 D-4	FB5504 C-1	1100002 0 4						
			D5603 B-1	R5605 B-6	. 2000	T5601 D-3						
			D5604 B-2	R5606 B-6	IC5501 B-3							
			* D5605 D-11	R5607 C-6	IC5502 B-5							
			· - ·	R5608 B-1	IC5601 B-6							
			FB5501 B-4	R5609 B-2	IC5602 B-6							
			FB5502 C-2 FB5503 C-1	R5612 B-6 R5613 A-6	IC5701 A-3							
			1 00000 0-1	R5614 B-6	L5501 B-3							
			IC5501 B-3	R5702 B-1	L5504 C-2							
			IC5502 B-5	R5703 B-1	L5505 B-4							
			IC5601 B-5	R5704 A-3	L5601 D-4							
			IC5602 B-6		L5602 D-4							
			IC5701 A-3	RB5501 C-3								
			L5501 B-3	RB5502 C-5 RB5503 C-5								
			L5501 B-3 L5502 C-2	11D3003 0-3								
			L5503 B-4	T5601 D-3								

Mounted parts location of the VC-278 board is not shown.

Pages from 4-97 to 4-98 are not shown.

### DCR-TRV738E/TRV740/TRV740E/TRV840



## SECTION 5 ADJUSTMENTS

## 1. Adjusting items when replacing main parts and boards. When replacing main parts, adjust the items indicated by ● in the following table.

	nain parts, adjust the items indicated by						_				I	Rep	lace												$\neg$
		F	Bloc	k r	epla	acer	nen	t				_					pla	cer	nen	t					
Adjustment Section	Adjustment	Lens device	LCD block ND901 (Fluorescent tube)	LCD block LCD901 (LCD panel)	Mechanism deck *1	Mechanism deck M901 (Drum assy.) *1		Mechanism deck LS chassis assy	CD-358 board IC551 (CCD imager)	CD-358 board IC552 (S/H)	PD-156/160 board IC5501 (RGB driver (LCD))*2 *3	PD-156/160 board IC5502 (Timing generator (LCD))*2*3	PD-156/160 board Q5602/5604, T5601 (Inverter)*2*3	SI-032 board SE301,302 (PITCH, YAW sensor)	VC-278 board IC1501, X1501 (Timing generator)	VC-278 board IC1502 (AGC, A/D conv.)	VC-278 board IC2201 (Hi8/Std8 Y/C process)	VC-278 board IC3103 (REC/PB AMP)	VC-278 board IC3101 (EQ, A/D conv. PLL)	VC-278 board IC3701 (VIDEO IN/OUT)	VC-278 board IC3301 (DV signal process)	VC-278 board IC2291 (EVR)	VC-278 board IC5701 (AUDIO IN/OUT, AFM)	VC-278 board IC7001 (LCD driver (EVF))	VC-278 board IC7002 (Timing generator (EVF))
Initialization of	Initialization of A, D page data																								$\neg$
8, A, B, C, D, E,	Initialization of B, 1B page data																								
F, 1B, 1C, 1E,	Initialization of 8, C, 1C page data																								$\dashv$
1F page data	Initialization of E, F, 1E, 1F page data																								$\dashv$
	HALL adj.	•																							$\neg$
	Flange back adj.	•							•																$\neg$
	Mechanical shutter adj.	•																							
	Black defective CCD adj.								•																
Camera	Color reproduction adj.								•	•						•									
	AWB & LV standard data input								•	•						•									
	Auto white balance adj.								•	•						•									
	Steady shot check													•											
	VCO adj.																							•	
EVF	RGB AMP adj.																							•	
	Contrast adj.																				•			•	
	VCO adj.					İ					•	•													$\neg$
	PSIG gray adj. *3										•														
	RGB AMP adj.										•														
I CD	Black limit adj. *3										•														
LCD	Contrast adj.										•										•				
	COM AMP adj.*2, Center level adj.*3										•							İ		İ					_
	V-COM adj.			•							•														
	White balance adj.		•	•							•		•												
System control	Serial No. input																								$\neg$
	REEL FG adj.				•																				$\neg$
	Switching position adj.				•	•																			
	AGC center level adj.				•	•												•	•	T					$\neg$
Servo & RF	APC & AEQ adj.				•	•		H										H	•	T					$\exists$
	PLL fo & LPF fo adj.				•	•		$\Box$										•	•	T					$\neg$
	Hi8/Std8 switching position adj.				•	•		$\vdash$										Ť	Ť						$\exists$
	CAP FG duty adj.				•	Ť	•	H										$\vdash$		T		•			$\exists$
	54MHz/66MHz origin oscillation adj.				Ť		_	Н							•			$\vdash$		$\vdash$		•			$\dashv$
	S VIDEO OUT Y level adj.							H										T		•	•	Ť			$\exists$
Video	S VIDEO OUT chroma level adj.							H												•	•				$\exists$
	Hi8/Std8 Y/C output level setting																•			† <b>-</b>					$\neg$
	Hi8/Std8 AFC fo adj.							H									•					•			$\dashv$
	Hi8/Std8 AFM BPF fo adj.							Н									۲	$\vdash$	$\vdash$	$\vdash$		•	•		$\dashv$
Audio	Hi8/Std8 AFM 1.5MHz deviation adj.							H										$\vdash$				•	•		$\dashv$
	Hi8/Std8 AFM 1.7MHz deviation adj.							Н														•	•		$\dashv$
Mechanism	Tape path adj.				•	•	•															Ť			$\dashv$
	т. г						_	ك		Ц								_		_			ш		

		ı	Board			ROM	
		repl	acen	nent	replac	ement	
Adjustment Section	Adjustment  Initialization of A, D page data	SI-032 board (COMPLETE)	PD-156/160 board (COMPLETE) *2 *3	VC-278 board (COMPLETE)	VC-278 board IC4502 (EEPROM)	■ VC-278 board IC4903 (EEPROM) *4	Supporting RadarW
		ļ		•			
8, A, B, C, D, E,	Initialization of B, 1B page data			•		•	
F, 1B, 1C, 1E,	Initialization of 8, C, 1C page data			•	•		
1F page data	Initialization of E, F, 1E, 1F page data			•	•		
	HALL adj.				•		
	Flange back adj.						
	Mechanical shutter adj.						
Camera	Black defective CCD adj.				•		•
Camera	Color reproduction adj.			•	•		
	AWB & LV standard data input			•	•		•
	Auto white balance adj.			•	•		•
	Steady shot check			•	•		•
	VCO adj.						
EVF	RGB AMP adj.				•		
	Contrast adj.						
	VCO adj.				•		
		-					
	PSIG gray adj. *3						
	RGB AMP adj.		•	•	•		
LCD	Black limit adj. *3		•	•	•		
	Contrast adj.		•		•		
	COM AMP adj.*2, Center level adj.*3				•		
	V-COM adj.						
	White balance adj.						
System control	Serial No. input						
	REEL FG adj.			•	•		•
	Switching position adj.			•	•		•
	AGC center level adj.			•	•		•
Servo & RF	APC & AEQ adj.				•		
Serve de ra	PLL fo & LPF fo adj.						
	Hi8/Std8 switching position adj.				•		
	CAP FG duty adj.				•		
		<del>                                     </del>			1		
	54MHz/66MHz origin oscillation adj.						
77:1	S VIDEO OUT Y level adj.				•		
Video	S VIDEO OUT chroma level adj.				•		
	Hi8/Std8 Y/C output level setting			•	•		
	Hi8/Std8 AFC fo adj.			•	•		
	Hi8/Std8 AFM BPF fo adj.				•		
Audio	Hi8/Std8 AFM 1.5MHz deviation adj.	L					
	Hi8/Std8 AFM 1.7MHz deviation adj.				•		
Mechanism	Tape path adj.						
	•	-			•		

- \*1: When replacing the drum assy. or mechanism deck, reset the data of page: 7, address: A7 to A9 to "00". (Refer to "Record of Use check" of "5-4. SERVICE MODE")
- \*2: LCD TYPE CA/SH (PD-156 board) DCR-TRV738E DCR-TRV740E: AEP, EE, NE, RU
- DCR-TRV840 \*3: LCD TYPE SO (PD-160 board) DCR-TRV740
  - DCR-TRV740E: E, AUS, HK, CH, JE DCR-TRV840
- \*4: When replacing the IC4903, set the loader writing inhibit mode. (Refer to "1-2-2. INITIALIZATION OF B, 1B PAGE DATA".)
- Abbreviation

HK: Hong Kong model
AUS: Australian model
CH: Chinese model
JE: Tourist model

EE : East European model NE : North European model

RU: Russian model

#### 5-1. CAMERA SECTION ADJUSTMENT

#### 1-1. PREPARATIONS BEFORE ADJUSTMENT (CAMERA SECTION)

#### 1-1-1. List of Service Tools

• Oscilloscope • Color monitor • Vectorscope

• Regulated power supply

• Digital voltmeter

Ref. No.	Name	Parts Code	Usage
J-1	Filter for color temperature correction (C14)	J-6080-058-A	Auto white balance adjustment/check White balance adjustment/check
	ND filter 1.0	J-6080-808-A	White balance check
J-2	ND filter 0.4	J-6080-806-A	White balance check
1	ND filter 0.1	J-6080-807-A	White balance check
J-3	Pattern box PTB-450	J-6082-200-A	
J-4	Color chart for pattern box	J-6020-250-A	
J-5	Adjustment remote commander (RM-95 upgraded) (Note1)	J-6082-053-B	
J-6	Siemens star chart	J-6080-875-A	For checking the flange back
J-7	Clear chart for pattern box	J-6080-621-A	
J-8	Multi CPC jig	J-6082-311-A	For adjusting the LCD block
J-9	CPC-13 jig	J-6082-443-A	For adjusting the video section For adjusting the color viewfinder
J-10	Minipattern box	J-6082-353-B	For adjusting the flange back
J-11	Camera base	J-6082-384-A	For adjusting the flange back

**Note1:** If the micro processor IC in the adjustment remote commander is not the new micro processor (UPD7503G-C56-12), the pages cannot be switched. In this case, replace with the new micro processor (8-759-148-35).

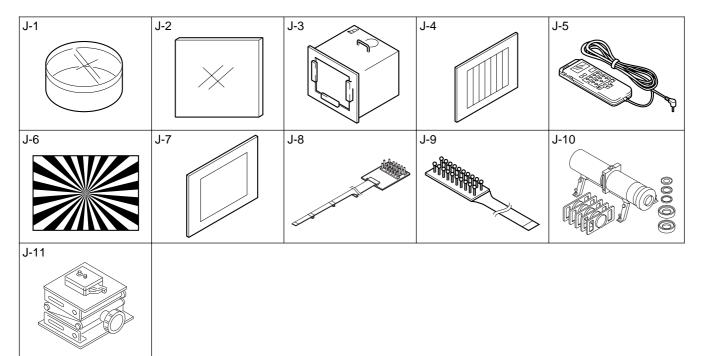


Fig. 5-1-1.

#### DCR-TRV738E/TRV740/TRV740E/TRV840

#### 1-1-2. Preparations

**Note1:** For details of how remove the cabinet and boards, refer to "2. DISASSEMBLY".

**Note2:** When performing only the adjustments, the lens block and boards need not be disassembled.

**Note3:** Before performing the adjustments, check the data of page: 0, address: 10 is "00". If not, set data: 00 to this address.

- 1) Connect the equipment for adjustments according to Fig. 5-1-3.
- 2) The front panel block (SI-032 board (Microphone amp., remote commander receiver), FP-411 flexible (MIC jack, Head phone jack, LANC jack, MF photo sensor)) must be assembled for connecting the adjusting remote commander.

Note4: As removing the cabinet (R) assembly (removing CN1110 of the VC-278 board) means removing the lithium 3V power supply (BT001 on the CF-2500 block), data such as date, time, user-set menus will be lost. After completing adjustments, reset these data. But the self-diagnosis data and the data on history of use (total drum rotation time etc.) will be kept even if the lithium 3V power supply is removed. (Refer to "5-4.Service Mode" for the self-diagnosis data and the data on history of use.)

Note5: Setting the "Forced Camera Power ON" Mode

- 1) Select page: 0, address: 01, and set data: 01.
- Select page: D, address: 10, set data: 01, and press the PAUSE button.

The above procedure will enable the camera power to be turned on with the SS-1380 block removed. After completing adjustments, be sure to exit the "Forced Camera Power ON Mode".

Note6: Exiting the "Forced Camera Power ON" Mode

- 1) Select page: 0, address: 01, and set data: 01.
- Select page: D, address: 10, set data: 00, and press the PAUSE button.
- 3) Select page: 0, address: 01, and set data: 00.

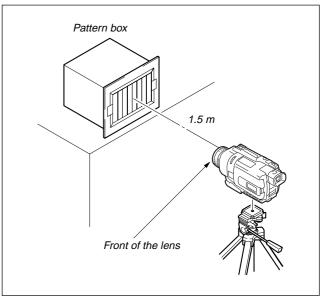


Fig. 5-1-2.

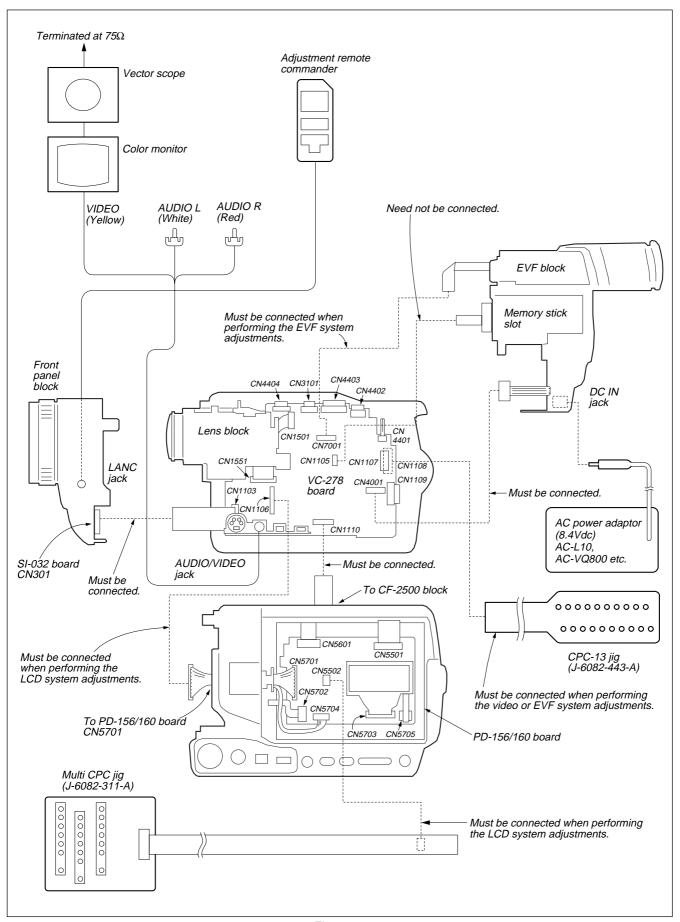


Fig. 5-1-3.

#### 1-1-3. Precaution

#### 1. Setting the Switch

Unless otherwise specified, set the switches as follows and perform adjustments without loading cassette.

1.	POWER switch (SS-1380 block)	CAMERA
2.	NIGHT SHOT switch (Lens block)	OFI
3.	COLOR SLOW SHUTTER (FK-2500 block)	OFI
4.	DEMO MODE (Menu display)	OFI
5.	DIGITAL ZOOM (Menu display)	OFI
6.	STEADY SHOT (Menu display)	OFI
7.	DISPLAY (Menu display)	. V-OUT/LCI
8.	DISPLAY (CF-2500 block)	ON

9.	FOCUS switch (CF-2500 block)	MANUAL
10.	BACK LIGHT (CF-2500 block)	OFF
11.	PROGRAM AE (Menu display)	OFF
	PICTURE EFFECT (Menu display)	
13.	DIGITAL EFFECT (Menu display)	OFF
14.	AUTO SHUTTER (Menu display)	OFF
	16 · 9 WIDE (MENII display)	

#### 2. Order of Adjustments

Basically carry out adjustments in the order given.

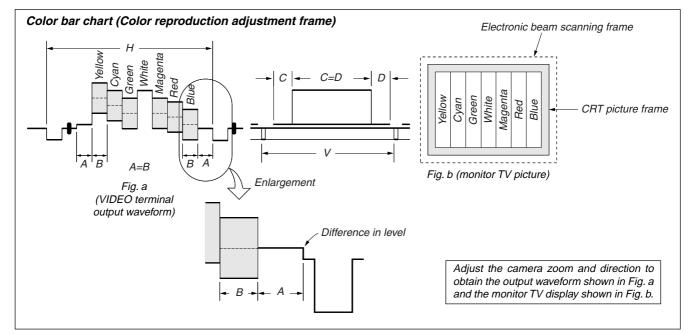


Fig.5-1-4.

#### 3. Subjects

- Color bar chart (Color reproduction adjustment frame)
   When performing adjustments using the color bar chart, adjust the picture frame as shown in Fig. 5-1-4. (Color reproduction adjustment frame)
- Clear chart (Color reproduction adjustment frame)
   Remove the color bar chart from the pattern box and insert a clear chart in its place. (Do not perform zoom operations during this time.)
- 3) Flange back adjustment chart Make the chart shown in Fig. 5-1-5 using A0 size (1189mm × 841mm) black and white vellum paper.

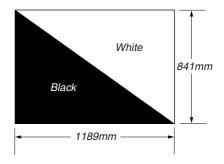


Fig. 5-1-5.

**Note:** Use matte vellum paper bigger than A0, and make sure the edges of the black and white paper joined together are not rough.

## 1-2. INITIALIZATION OF 8, A, B, C, D, E, F, 1B, 1C, 1E, 1F PAGE DATA

**Note:** When reading or writing the 1B, 1C, 1D, 1E or 1F page data, select page: 0, address: 10, and set data: 01, then select B, C, D, E or F page. The 1B, 1C, 1D, 1E or 1F page can be chosen by this data setting.

After reading or writing, reset the data of page: 0, address: 10 to "00".

## [Connection of the power supply during the initialization of the data.]

- Connect the regulated power supply and the digital voltmeter to the battery terminal as shown in Fig. 5-1-6.
- 2) Adjust the output voltage of the regulated power supply so that the digital voltmeter display is  $6.0 \pm 0.1 \text{Vdc}$ .
- 3) Turn off the power supply.
- 4) Turn on the HOLD switch of the adjustment remote commander.
- 5) Turn on the power supply.
- 6) Perform the initialization of the data.

**Note:** This is normal though the following message is indicated on the LCD screen.

"FOR InfoLITHIUM BATTERY ONLY"

#### [Initialization Procedure]

- 1. Initialization of A, D page data
- 2. Initialization of B, 1B page data
- 3. Initialization of 8, C, 1C page data
- 4. Initialization of E, F, 1E, 1F page data

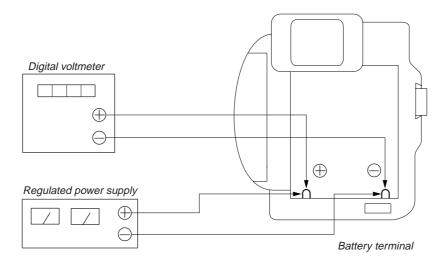


Fig. 5-1-6.

#### 1-2-1. INITIALIZATION OF A, D PAGE DATA

**Note:** The data of page: 0, address: 10 must be "00".

#### 1. Initializing the A, D Page Data

Note1: If "Initializing the A, D Page Data" is performed, all data of the A page and D page will be initialized. (It is impossible to initialize a single page.)

Note2: If the A, D page data has been initialized, the following adjustments

need to be performed again.

1) Modification of A, D page data

**Note3:** The power supply voltage must be  $6.0 \pm 0.1 \text{Vdc}$ .

Note4: NTSC model: DCR-TRV740/TRV840 PAL model: DCR-TRV738E/TRV740E

Adjusting page	A
Adjusting Address	10 to FF
Adjusting page	D
Adjusting Address	10 to 67

#### **Initializing Method:**

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	0	10	00	Set the data.
3	7	03		Set the following data. 01 (NTSC), 81 (PAL)
4	7	00	28	Set the data
5	7	01	28	Set the data, and press the PAUSE button.
6	7	02		Check that the data changes to "01"
7	2	00	29	Set the data.
8	2	01	29	Set the data, and press the PAUSE button.
9				Perform "Modification of A, D Page Data".

#### 2. Modification of A, D Page Data

If the A, D page data has been initialized, change the data of the "Fixed data-2" address shown in the following tables by manual input.

#### **Modifying Method:**

- 1) Before changing the data, select page: 0, address: 01, and set
- 2) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.

**Note:** If copy the data built in the different model, the camcorder may not operate.

3) When changing the data, press the PAUSE button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.

#### Processing after Completing Modification of A, D Page data

Order	Page	Address	Data	Procedure
1	0	10	00	Set the data.
2	2	00	29	Set the data.
3	2	01	29	Set the data, and press PAUSE button.

**Note:** If the following symptoms occur after completing of the "Modification of A, D page data", check that the data of the "Fixed data-2" addresses of A and D page are same as those of the same model of the same destination.

- 1) The self-diagnosis code "E:20:00" on the LCD screen is displayed.
- 2) The power is shut off so that unit cannot operate.

#### 3. A Page Table

**Note1:** The data of page: 0, address: 10 must be "00".

Note2: Fixed data-1: Initialized data. (Refer to "1. Initializing the A, D

Page Data".)

Fixed data-2: Modified data. (Refer to "2. Modification of A, D Page Data".)

-	50 2 4 4 1
Address	Remark
00 to 0F	
10 to 17	Fixed data-1
18	Fixed data-2
19	Fixed data-1
1A	Fixed data-2
1B to 31	Fixed data-1
32	Fixed data-2
33 to 59	Fixed data-1
5A	Fixed data-2
5B to C1	Fixed data-1
C2	Fixed data-2
C3 to CF	Fixed data-1
D0	Fixed data-2
D1	
D2 to FF	Fixed data-1

Table. 5-1-2.

## 4. D Page Table

Note1: The data of page: 0, address: 10 must be "00".

Note2: Fixed data-1: Initialized data. (Refer to "1. Initializing the A, D

Page Data".)

Fixed data-2: Modified data. (Refer to "2. Modification of A, D

Page Data".)

1 0,	ge Data".)	
Address	Initial value	Remark
00 to 0F		
10	00	Test mode
11 to 12		Fixed data-1
13		Fixed data-2
14 to 15		Fixed data-1
16		Fixed data-2
17 to 21		Fixed data-1
22		Fixed data-2
23		(Modified data. Copy the data built in
24		the same model.)
25		
26		
27 to 29		Fixed data-1
2A		Fixed data-2
2B		
2C to 36		Fixed data-1
37		Fixed data-2
38		Fixed data-1
39		Fixed data-2
3A		
3B to 5E		Fixed data-1
5F		Fixed data-2
60 to 67		Fixed data-1

Table. 5-1-3.

#### 1-2-2. INITIALIZATION OF B, 1B PAGE DATA

**Note:** When reading or writing the B page data, select page: 0, address: 10, and set data: 00.

> When reading or writing the 1B page data, select page: 0, address: 10, and set data: 01, then select B page. The 1B page can be chosen by this data setting.

> After reading or writing, reset the data of page: 0, address: 10 to

#### 1. Initializing the B, 1B Page Data

Note1: If "Initializing the B, 1B Page Data" is performed, all data of the B page and 1B page will be initialized. (It is impossible to initialize a single page.)

If the B, 1B page data has been initialized, the following Note2: adjustments need to be performed again.

1) Modification of B, 1B page data

**Note3:** The power supply voltage must be  $6.0 \pm 0.1 Vdc$ .

Adjusting page	В
Adjusting Address	00 to FF
Adjusting page	1B
Adjusting Address	00 to FF

#### **Initializing Method:**

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	0	10	00	Set the data.
3	5	02	FF	Set the data.
4	5	01	F3	Set the data, and press PAUSE button.
5	5	00	01	Set the data, and press PAUSE button.
6	5	02		Check that the data changes to "00".
7	2	00	29	Set the data
8	2	01	29	Set the data, and press the PAUSE button.
9				Perform "Modification of B, 1B Page Data".

#### 2. Modification of B, 1B Page Data

If the B, 1B page data has been initialized, change the data of the "Fixed data-2" address shown in the following tables by manual input.

#### **Modifying Method:**

- 1) Before changing the data, select page: 0, address: 01, and set
- When changing the B page data, select page: 0, address: 10, and set data: 00.
- When changing the 1B page data, select page: 0, address: 10, and set data: 01.
  - After completing the modification of 1B page data, reset the data of this address to "00".
- New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.

Note: If copy the data built in the different model, the camcorder may

5) When changing the data, press the PAUSE button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.

#### Processing after Completing Modification of B, 1B Page data:

Order	Page	Address	Data	Procedure
1	0	10	00	Set the data.
2	2	00	29	Set the data.
3	2	01	29	Set the data, and press PAUSE button.

#### 3. Loader writing inhibit mode setting

When replacing the IC4903 (EEPROM), set the loader inhibit mode.

#### **Setting Method:**

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	0	10	00	Set the data.
3	5	0E	00	Set the data, and press PAUSE button.
4	5	03	20	Set the data, and press PAUSE button.
5	5	01	FA	Set the data, and press PAUSE button.
6	5	00	01	Set the data, and press PAUSE button.
7	5	0E		Check that the data is "01".
8	2	00	29	Set the data
9	2	01	29	Set the data, and press the PAUSE button.

#### 4. B Page Table

Note1: The data of page: 0, address: 10 must be "00".

Note2: Fixed data-1: Initialized data. (Refer to "1. Initializing the B, 1B

Page Data".)

Fixed data-2: Modified data. (Refer to "2. Modification of B, 1B Page Data".)

Address	Remark
00 to FF	Fixed data-1

Table. 5-1-4.

#### 5. 1B Page Table

**Note1:** When reading or writing the 1B page data, select page: 0, address: 10, and set data: 01, then select B page. The 1B page can be chosen by this data setting.

After reading or writing, reset the data of page: 0, address: 10 to "00".

Note2: Fixed data-1: Initialized data. (Refer to "1. Initializing the B, 1B Page Data".)

> Fixed data-2: Modified data. (Refer to "2. Modification of B, 1B Page Data".)

Α	ddress		Remark
(	00 to FF	Fixed data-1	

Table. 5-1-5.

#### 1-2-3. INITIALIZATION OF 8, C, 1C PAGE DATA

**Note:** When reading or writing the 8, C page data, select page: 0, address: 10, and set data: 00.

When reading or writing the 1C page data, select page: 0, address: 10, and set data: 01, then select C page. The 1C page can be chosen by this data setting.

After reading or writing, reset the data of page: 0, address: 10 to "00"

#### 1. Initializing the 8, C, 1C Page Data

Note1: If "Initializing the 8, C, 1C Page Data" is performed, all data of the 8 page, C page and 1C page will be initialized. (It is impossible to initialize a single page.)

**Note2:** If the 8, C, 1C page data has been initialized, following adjustments need to be performed again.

- 1) Modification of 8, C, 1C page data
- 2) Serial No. input
- 3) Viewfinder system adjustments
- 4) LCD system adjustments
- 5) Servo and RF system adjustments
- 6) Video system adjustments
- 7) Audio system adjustments

**Note3:** The power supply voltage must be  $6.0 \pm 0.1 \text{Vdc}$ .

Adjusting page	8
Adjusting Address	00 to A3
Adjusting page	С
Adjusting Address	10 to FF
Adjusting page	1C
Adjusting Address	00 to FF

#### **Initializing Method:**

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	0	10	00	Set the data.
3	3	81	10	Set the data.
4	3	80	0C	Set the data, and press PAUSE button.
5	3	80		Check that the data changes to "1C".
6	2	00	29	Set the data
7	2	01	29	Set the data, and press the PAUSE button.
8		·		Perform "Modification of 8, C, 1C Page Data".

#### 2. Modification of 8, C, 1C Page Data

If the 8, C, 1C page data has been initialized, change the data of the "Fixed data-2" address shown in the following table by manual input.

#### **Modifying Method:**

- 1) Before changing the data, select page: 0, address: 01, and set data: 01.
- When changing the 8, C page data, select page: 0, address: 10, and set data: 00.
- When changing the 1C page data, select page: 0, address: 10, and set data: 01.
  - After completing the modification of 1C page data, reset the data of this address to "00".
- 4) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.

**Note:** If copy the data built in the different model, the camcorder may not operate.

- 5) When changing the data, press the PAUSE button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.
- Check that the data of adjustment addresses is the initial value.
   If not, change the data to the initial value.

#### Processing after Completing Modification of 8, C, 1C Page data

Order	Page	Address	Data	Procedure
1	0	10	00	Set the data.
2	2	00	29	Set the data.
3	2	01	29	Set the data, and press PAUSE button.

#### 3. 8 Page Table

**Note1:** The data of page: 0, address: 10 must be "00".

Note2: Fixed data-1: Initialized data. (Refer to "1. Initializing the 8, C,

1C Page Data".)

Fixed data-2: Modified data. (Refer to "2. Modification of 8, C, 1C Page Data".)

Remark Address Initial value Fixed data-1 00 to 18 19 Fixed data-2 1A to 34 Fixed data-1 35 Fixed data-2 36 to 49 Fixed data-1 4A Fixed data-2 4B to 51 Fixed data-1 52 Fixed data-2 53 to 79 Fixed data-1 Fixed data-2 7A 7B (Modified data. Copy the data built in 7C the same model.) 7D 7E 7F 80 81 82 83 84 Fixed data-1 85 to 89 Fixed data-2 8A 8B Fixed data-1 8C 08 Serial No. input 8D 00 8E 46 8F 01 90 02 91 00 92 00 93 00 84 to A3 Fixed data-1

Table. 5-1-6.

#### 4. C Page Table

**Note1:** The data of page: 0, address: 10 must be "00".

Note2: Fixed data-1: Initialized data. (Refer to "1. Initializing the 8, C,

1C Page Data".)

Fixed data-2: Modified data. (Refer to "2. Modification of 8, C,

1C Page Data".)

	Page Data".)	
Address	Initial value	Remark
00 to 0F		
10	EE	Switching position adj.
11	00	
12	00	
13	00	
14 to 15		Fixed data-1
16	E0	Hi8/std8 CAP FG duty adj.
17	E0	Reel FG adj.
18	20	AEQ adj.
19	20	
1A		Fixed data-1
1B	25	AEQ adj.
1C	25	
1D		Fixed data-1
1E	25	AGC center level adj.
1F	3E	PLL fo adj.
20	3E	
21	CA	APC adj.
22	99	LPF fo adj.
23 to 24		Fixed data-1
25	88	S VIDEO out Y level adj.
26	E3	S VIDEO out Cr level adj.
27	A1	S VIDEO out Cb level adj.
28		Fixed data-2
29	20	PLL fo adj.
2A to 2B		Fixed data-1
2C	03	APC adj.
2D		Fixed data-1
2E		Fixed data-2
2F	E0	Reel FG adj.
30 to 3C		Fixed data-1
3D		Fixed data-2
3E		Fixed data-1
3F		Fixed data-2
40	0A	Hi8/std8 switching position adj.
41	00	1
42		Fixed data-1
43	50	Hi8/std8 AFC fo adj.
44	69	Hi8/Std8 Y/C output level set
45	64	·
46 to 47		Fixed data-1
48		Fixed data-2
49		Fixed data-1
4A		Fixed data-2
4B		Fixed data-1
4C	A6	Hi8/std8 AFM 1.5MHz deviation adj.
4D	94	Hi8/std8 AFM 1.7MHz deviation adj.
4E	80	Hi8/std8 AFM BPF fo adj.
4F		Fixed data-2
50		June 2
50		

## C page

C page		
Address		Remark
	Initial value	
51	61/69 *1	VCO adj. (EVF)
52	76/56 *1	
53	07/07/14	Fixed data-1
54	9D/9C *1	RGB AMP adj. (EVF)
55 to 57	27/24/14	Fixed data-1
58	2B/26 *1	Contrast adj. (EVF)
59		Fixed data-1
5A		Fixed data-2
5B to 5E		Fixed data-1
5F	05/04/06/	Fixed data-2
60	8F/8A/86/	Fixed data
	A7/8F *2	11.00 11.01.0D)
61	5C/51/5B/	VCO adj. (LCD)
- 62	67/68 *2	
62	70/54/62/	
- 62	53/59 *2	A COM T. (LCD.)
63	21/85/24/	V-COM adj. (LCD)
6.4	8B/22 *2	DCD AMB II (LCD)
64	9D/20/B2/	RGB AMP adj. (LCD)
<i>C</i> 5	29/A1 *2	Fixed data *3
65	08/00/07/	
	00/08 *2	Black limit adj. (LCD) *4
66	3D/9D/3A/	COM AMP adj. *3
	99/3F *2	PSIG gray adj. (LCD) *4
67	7E/55/7E/	White balance adj. (LCD)
60	84/81 *2	
68	6C/3F/78/	
<i>(</i> 0	5F/6F *2	Control of Alexander
69	20/37/2A/	Contrast adj. (LCD)
6A	40/1E *2 37/00/2D/	Fixed data *3
0A	00/37 *2	
6B	0C/50/0F/	Center level adj. (LCD)*4 Fixed data
OD	32/0C *2	Prixed data
6C	0C/10/0F/	
00	12/0C *2	
6D	12/00 2	Fixed data-1
6E	5F/1F/DF/	Fixed data
OL	1F/5F *2	1 ixed data
6F to 71	11/31 2	Fixed data-1
72		Fixed data-1
73 to 75		Fixed data-1
76		Fixed data-2
77 to 79		Fixed data-1
7A		Fixed data-2
7B to 81		Fixed data-1
81		Fixed data-2
82		
83 to 85		Fixed data-1
86		Fixed data-2
87 to 88		Fixed data-1
89		Fixed data-2
8A		
8B to A9		Fixed data-1
AA		Fixed data-2

Address	Initial value	Remark
AB		Fixed data-1
AC		Fixed data-2
AD to AE		Fixed data-1
AF		Fixed data-2
B0 to D4		Fixed data-1
D5		Fixed data-2
D6		
D7 to DC		Fixed data-1
DD		Fixed data-2
DE to E1		Fixed data-1
E2		Fixed data-2
E3		
E4 to F3		Fixed data-1
F4	00	Emergency memory address
F5	00	
F6	00	
F7	00	
F8	00	
F9	00	
FA	00	
FB	00	
FC	00	
FD	00	
FE	00	
FF	00	

\*1: NTSC/PAL

\*2: A/B/C/D/E

A: NTSC 2.5 LCD TYPE SO (DCR-TRV740)

B: NTSC 3.5 LCD TYPE CA (DCR-TRV840)

C: NTSC 3.5 LCD TYPE SO (DCR-TRV840)

D: PAL 2.5 LCD TYPE SH

(DCR-TRV738E/TRV740E (AEP/EE/NE/RU))

E: PAL 2.5 LCD TYPE SO

(DCR-TRV740E (E/AUS/HK/CN/JE))

\*3: LCD TYPE CA or SH (PD-156 board)

\*4: LCD TYPE SO (PD-160 board)

Table. 5-1-7.

### 5. 1C Page Table

**Note1:** When reading or writing the 1C page data, select page: 0, address: 10, and set data: 01, then select C page. The 1C page can be chosen

by this data setting.

After reading or writing, reset the data of page: 0, address: 10 to "00".

Note2: Fixed data-1: Initialized data. (Refer to "1. Initializing the 8, C, 1C Page Data".)

Fixed data-2: Modified data. (Refer to "2. Modification of 8, C, 1C Page Data".)

10	Page Data".)
Address	Remark
00 to 03	Fixed data-1
04	Fixed data-2
05 to 06	Fixed data-1
07	Fixed data-2
08	
09	Fixed data-1
0A	Fixed data-2
0B	(Modified data. Copy the data built in the same
0C	model.)
0D	
0E	
0F	Fixed data-1
10	Fixed data-2
11	
12 to 13	Fixed data-1
14	Fixed data-2
15	
16 to 17	Fixed data-1
18	Fixed data-2
19 to 1A	Fixed data-1
1B	Fixed data-2
1C	Fixed data-1
1D	Fixed data-2
1E	Fixed data-1
1F	Fixed data-2
20 to 22	Fixed data-1
23	Fixed data-2
24 to 26	Fixed data-1
27	Fixed data-2
28 to 39	Fixed data-1
3A	Fixed data-2
3B	Fixed data-1
	Fixed data-2
3D	(Modified data. Copy the data built in the same
3E	model.)
3F to 40	Fixed data-1
41	Fixed data-2
42 to 43	Fixed data-1
44	Fixed data-2
45	(Modified data. Copy the data built in the same
46	model.)
47	Fixed data-1
48	Fixed data-2
49	Fixed data-1
4A	Fixed data-2
4B to 4F	Fixed data-1
50 51 to 55	Fixed data-2 Fixed data-1
51 to 55	11AGU UAIA-1

Address	Remark
56	Fixed data-2
57	
58 to 5A	Fixed data-1
5B	Fixed data-2
5C	Fixed data-1
5D	Fixed data-2
5E	Fixed data-1
5F	Fixed data-2
60	
61	Fixed data-1
62	Fixed data-2
63	(Modified data. Copy the data built in the same
64	model.)
65	Fixed data-1
66	Fixed data-2
67	Fixed data-1
68	Fixed data-2
69	(Modified data. Copy the data built in the same
6A	model.)
6B to 6C	Fixed data-1
6D	Fixed data-2
6E	
6F	Fixed data-1
70	Fixed data-2
71	Fixed data-1
72	Fixed data-2
73	(Modified data. Copy the data built in the same
74	model.)
75	
76	
77	
78	Fixed data-1
79	Fixed data-2
7A	(Modified data. Copy the data built in the same
7B	model.)
7C	
7D	
7E	
7F	
80	71. 11. 1
81	Fixed data-1
82	Fixed data-2
83 to 85	Fixed data-1
86	Fixed data-2
87	(Modified data. Copy the data built in the same
88	model.)
89	
8A	
8B	Eirad data 1
8C to 97	Fixed data-1
98	Fixed data-2
99 to 9E	Fixed data-1
9F	Fixed data-2
A0 to FF	Fixed data-1

Table. 5-1-8.

#### 1-2-4. INITIALIZATION OF E, F, 1E, 1F PAGE DATA

**Note:** When reading or writing the E, F page data, select page: 0, address: 10, and set data: 00.

When reading or writing the 1E or 1F page data, select page: 0, address: 10, and set data: 01, then select E or F page. The 1E or 1F page can be chosen by this data setting.

After reading or writing, reset the data of page: 0, address: 10 to "00"

#### 1. Initializing the E, F, 1E, 1F Page Data

Note1: If "Initializing the E, F, 1E, 1F Page Data" is performed, all data of the E page, F page, 1E page and 1F page will be initialized. (It is impossible to initialize a single page.)

**Note2:** If the E, F, 1E, 1F page data has been initialized, following adjustments need to be performed again.

1) Modification of E, F, 1E, 1F page data

2) 54MHz/66MHz origin osc. Adj.

3) Camera system adjustments

**Note3:** The power supply voltage must be  $6.0 \pm 0.1 Vdc$ .

Note4: NTSC model: DCR-TRV840

PAL model: DCR-TRV738E/TRV740E

Adjusting page	Е
Adjusting Address	00 to FF
Adjusting page	F
Adjusting Address	10 to FF
Adjusting page	1E
Adjusting Address	00 to 2F
Adjusting page	1F
Adjusting Address	00 to FF

#### **Initializing Method:**

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	0	10	00	Set the data.
3	6	01		Set the following data, and press PAUSE button. 2D (NTSC), 2F (PAL)
4	6	03	01	Set the data, and press PAUSE button.
5	6	02		Check that the data changes to "01".
6	2	00	29	Set the data
7	2	01	29	Set the data, and press the PAUSE button.
8				Perform "Modification of E, F, 1E, 1F Page Data".

#### 2. Modification of E, F, 1E, 1F Page Data

If the E, F, 1E, 1F page data has been initialized, change the data of the "Fixed data-2" address shown in the following table by manual input.

#### **Modifying Method:**

- 1) Before changing the data, select page: 0, address: 01, and set data: 01.
- When changing the E, F page data, select page: 0, address: 10, and set data: 00.
- 3) When changing the 1E, 1F page data, select page: 0, address: 10, and set data: 01.
  - After completing the modification of 1E, 1F page data, reset the data of this address to "00".
- 4) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.

**Note:** If copy the data built in the different model, the camcorder may not operate.

- 5) When changing the data, press the PAUSE button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.
- Check that the data of adjustment addresses is the initial value.
   If not, change the data to the initial value.

## Processing after Completing Modification of E, F, 1E, 1F Page data

Order	Page	Address	Data	Procedure
1	0	10	00	Set the data.
2	2	00	29	Set the data.
3	2	01	29	Set the data, and press PAUSE
				button.

## 3. E Page Table

Note1: The data of page: 0, address: 10 must be "00".

Note2: Fixed data-1: Initialized data. (Refer to "1. Initializing the E, F,

1E, 1F Page Data".)

Fixed data-2: Modified data. (Refer to "2. Modification of E, F, 1E, JF Page Data")

1E, 1F Page Data".)					
Address	Remark				
00 to 04	Fixed data-1				
05	Fixed data-2				
06 to 07	Fixed data-1				
08	Fixed data-2				
09	(Modified data. Copy the data built in the same				
0A	model.)				
0B					
0C to 0C	Fixed data-1				
0D	Fixed data-2				
0E					
0F to 1A	Fixed data-1				
1B	Fixed data-2				
1C to 1F	Fixed data-1				
20	Fixed data-2				
21	(Modified data. Copy the data built in the same				
22	model.)				
23					
24	Fixed data-1				
25	Fixed data-2				
26	(Modified data. Copy the data built in the same				
27	model.)				
28 to 3B	Fixed data-1				
3C	Fixed data-2				
3D	(Modified data. Copy the data built in the same				
3E 3F	model.)				
40 to 41	Fixed data-1				
42	Fixed data-2				
43 to 46	Fixed data-1				
47	Fixed data-2				
48 to 53	Fixed data-1				
54	Fixed data-2				
55					
56 to 5A	Fixed data-1				
5B	Fixed data-2				
5C	(Modified data. Copy the data built in the same				
5D	model.)				
5E					
5F					
60	Fixed data-1				
61	Fixed data-2				
62	(Modified data. Copy the data built in the same				
63	model.)				
64 to 65	Fixed data-1				
66	Fixed data-2				
67	(Modified data. Copy the data built in the same				
68	model.)				
69					
6A to 6E	Fixed data-1				

Address	Remark
ĆE.	F: 1 Jan. 2
6F	Fixed data-2
70	(Modified data. Copy the data built in the same
71	model.)
72 to 9B	Fixed data-1
9C	Fixed data-2
9D	Fixed data-1
9E	Fixed data-2
9F to CD	Fixed data-1
CE	Fixed data-2
CF to DF	Fixed data-1
E0	Fixed data-2
E1	
E2	Fixed data-1
E3	Fixed data-2
E4	(Modified data. Copy the data built in the same
E5	model.)
E6	
E7	
E8	
E9	
EA	
EB to EE	Fixed data-1
EF	Fixed data-2
F0 to F6	Fixed data-1
F7	Fixed data-2
F8 to FF	Fixed data-1

Table. 5-1-9.

4. F Page Table
Note1: The data of page: 0, address: 10 must be "00".
Note2: Fixed data-1: Initialized data. (Refer to "1. Initializing the E, F, 1E, 1F Page Data".)
The late 2: Modified data (Refer to "2. Modification of E, F, 1)

Fixed data-2: Modified data. (Refer to "2. Modification of E, F, 1E, 1F Page Data")

1E, 1F Page Data".)				
Address	Initial value	Remark		
00 to FF				
10	40	54/66MHz origin osc. adj.		
11 to 12		Fixed data-1		
13	44	HALL adj.		
14	CE			
15	17			
16 to 18		Fixed data-1		
19	00	Fixed data-2		
1A	80	AWB & LV standard data input		
1B	7A	E: J J-4- 1		
1C to 2F 30	4D	Fixed data-1		
31	3E	AWB & LV standard data input		
32	64			
33	59			
34	98	Auto white balance adj.		
35	75	Truto winte buitance adj.		
36	,,,	Fixed data-1		
37	3A	Color reproduction adj.		
38		Fixed data-1		
39	2E	Color reproduction adj.		
3A to 3F		Fixed data-1		
40	FE	Color reproduction adj.		
41	DF			
42 to 43		Fixed data-1		
44		Fixed data-2		
45		(Modified data. Copy the data built in		
46		the same model.)		
47				
48	28	Flange back adj.		
49	8E			
4A	34			
4B	69			
4C	11			
4D 4E	64 00			
4E 4F	00			
50	00			
51	00			
52	2B			
53	19			
54	00			
55	2F			
56	00			
57	00	1		
58	00			
59 to 71		Fixed data-1		
72		Fixed data-2		
73				
74 to 75		Fixed data-1		
76	40	Mechanical shutter adj.		
77	00			
78	34			
79	00			

Address	Initial value	Remark
7A	30	Mechanical shutter adj.
7B	00	Weenamear shutter aug.
7C	2A	
7D	00	
7E	28	
7E 7F	00	
80	40	-
81	3A	-
82	31	-
83	31	-
84	35	-
85	1E	-
86	80	-
87	80	-
88	80	-
89	80	-
8A	80	·
8B	80	<del> </del>
8C	03	<del> </del>
8D	80	-
8E	80	-
8F	80	
90 to 97	00	Fixed data-1
98		Fixed data-1
99		1 fact data-2
9A		
9B		
9C to A8		Fixed data-1
A9		Fixed data-1
AA		Fixed data-1
AB		Fixed data-2
AC to CF		Fixed data-1
D0		Fixed data-2
D1 to D7		Fixed data-1
D8		Fixed data-2
D9		(Modified data. Copy the data built in
DA		the same model.)
DB		,
DC		
DD		
DE		
DF		
E0 to E2		Fixed data-1
E3		Fixed data-2
E4		
E5 to F6		Fixed data-1
E7		Fixed data-2
E8 to F4		Fixed data-1
F5		Fixed data-2
F6		Fixed data-1
F7		Fixed data-2
F8		(Modified data. Copy the data built in
F9		the same model.)
FA		
FB		
FC to FD		Fixed data-1
FE		Fixed data-2
FF		Fixed data-1
		Table 5 1 10

Table. 5-1-10.

#### 5. 1E Page Table

Note1: When reading or writing the 1E page data, select page: 0, address: 10, and set data: 01, then select E page. The 1E page can be chosen by this data setting.

After reading or writing, reset the data of page: 0, address: 10 to "00".

**Note2:** Fixed data-1: Initialized data. (Refer to "1. Initializing the E, F, 1E, 1F Page Data".)

Fixed data-2: Modified data. (Refer to "2. Modification of E, F, 1E, 1F Page Data".)

Address		Remark		
Addicas	Initial value	Hemark		
00 to 1F		Fixed data-1		
20	00	Black defective CCD adj.		
21	00			
22	00			
23	00			
24	00			
25	00			
26	00			
27	00			
28	00			
29	00			
2A	00			
2B	00			
2C	00			
2D	00			
2E	00			
2F	00			

Table. 5-1-11.

#### 6. 1F Page Table

Note1: When reading or writing the 1F page data, select page: 0, address: 10, and set data: 01, then select F page. The 1F page can be chosen by this data setting.

After reading or writing, reset the data of page: 0, address: 10 to "00"

**Note2:** Fixed data-1: Initialized data. (Refer to "1. Initializing the E, F, 1E, 1F Page Data".)

Fixed data-2: Modified data. (Refer to "2. Modification of E, F, 1E, 1F Page Data".)

Address         Fixed data-1           39         Fixed data-2           3A to 41         Fixed data-1           42         Fixed data-2           43 to 44         Fixed data-1           45         Fixed data-2           46         Fixed data-2           47 to 9F         Fixed data-1           A0         Fixed data-2           A1         Fixed data-2           A3 to AB         Fixed data-1           AC         Fixed data-2           AD         (Modified data. Copy the data built in the same model.)           AF         Fixed data-1           B0 to B1         Fixed data-1           B4         Fixed data-2           B5 to B7         Fixed data-1           B8         Fixed data-2           B9         (Modified data. Copy the data built in the same model.)           BB to BD         Fixed data-1           BE         Fixed data-2           BF to C9         Fixed data-1           BE         Fixed data-2           BF to C9         Fixed data-1           CA         Fixed data-2           CB         CC           CD to CE         Fixed data-1           CF <td< th=""><th>112</th><th>, 1F Page Data".)</th></td<>	112	, 1F Page Data".)
39 Fixed data-2 3A to 41 Fixed data-1 42 Fixed data-2 43 to 44 Fixed data-1 45 Fixed data-2 46 Fixed data-2 47 to 9F Fixed data-1 A0 Fixed data-2 A1 Fixed data-1 A2 Fixed data-2 A3 to AB Fixed data-1 AC Fixed data-2 AD (Modified data. Copy the data built in the same model.) AF B0 to B1 Fixed data-1 B2 Fixed data-2 B3 Fixed data-1 B4 Fixed data-2 B5 to B7 Fixed data-1 B8 Fixed data-1 B8 Fixed data-2 B9 (Modified data. Copy the data built in the same model.) BB to BD Fixed data-1 BB Fixed data-2 B9 (Modified data. Copy the data built in the same model.) BB to BD Fixed data-1 BE Fixed data-2 B9 (Fixed data-1 B1 Fixed data-2 B1 Fixed data-1 B2 Fixed data-1 B3 Fixed data-1 B4 Fixed data-2 B5 to C9 Fixed data-1 B5 Fixed data-2 B6 Fixed data-1 B7 Fixed data-2 B8 Fixed data-2 B9 Fixed data-1 C9 Fixed data-2	Address	Remark
3A to 41         Fixed data-1           42         Fixed data-2           43 to 44         Fixed data-1           45         Fixed data-2           46         Fixed data-1           47 to 9F         Fixed data-1           A0         Fixed data-2           A1         Fixed data-2           A3 to AB         Fixed data-1           AC         Fixed data-2           AD         (Modified data. Copy the data built in the same model.)           AF         B0 to B1           B2         Fixed data-1           B4         Fixed data-1           B4         Fixed data-1           B8         Fixed data-2           B9         (Modified data. Copy the data built in the same model.)           BB to BD         Fixed data-1           BE         Fixed data-2           BF to C9         Fixed data-1           CA         Fixed data-1           CB         CC           CD to CE         Fixed data-1           CF         Fixed data-2           D0 to DC         Fixed data-1           CF         Fixed data-2           D0 to E         Fixed data-1           CF         Fixed data-2 <td>00 to 38</td> <td>Fixed data-1</td>	00 to 38	Fixed data-1
42 Fixed data-2 43 to 44 Fixed data-1 45 Fixed data-2 46 47 to 9F Fixed data-1 A0 Fixed data-2 A1 Fixed data-1 A2 Fixed data-1 A2 Fixed data-1 AC Fixed data-1 AC Fixed data-1 AC Fixed data-1 BE Fixed data-1 BB Fixed data-1 BB Fixed data-1 BB Fixed data-1 BB Fixed data-1 BB Fixed data-1 BB Fixed data-1 BB Fixed data-1 BB Fixed data-1 BB Fixed data-1 BB Fixed data-1 BB Fixed data-1 BB Fixed data-2 BB Fixed data-1 BB Fixed data-2 BB Fixed data-2 BB Fixed data-1 BB Fixed data-2 BB Fixed data-1 BC Fixed data-1 BC Fixed data-1 BC Fixed data-1 BC Fixed data-1 BC Fixed data-1 BC Fixed data-1 BC Fixed data-1 BC Fixed data-1 BC Fixed data-1 BC Fixed data-1 BC Fixed data-1 BC Fixed data-1 BC Fixed data-1 BC Fixed data-1 BC Fixed data-1 BC Fixed data-1 BC Fixed data-2 BC Fixed data-1 BC Fixed data-1 BC Fixed data-1 BC Fixed data-1 BC Fixed data-1 BC Fixed data-1 BC Fixed data-1 BC Fixed data-1 BC Fixed data-1 BC Fixed data-1 BC Fixed data-1 BC Fixed data-1 BC Fixed data-1	39	Fixed data-2
43 to 44 Fixed data-1 45 Fixed data-2 46 47 to 9F Fixed data-1 A0 Fixed data-2 A1 Fixed data-1 A2 Fixed data-2 A3 to AB Fixed data-1 AC Fixed data-2 AD (Modified data. Copy the data built in the same model.) AF B0 to B1 Fixed data-1 B2 Fixed data-2 B3 Fixed data-1 B4 Fixed data-1 B4 Fixed data-1 B8 Fixed data-1 B8 Fixed data-1 B8 Fixed data-1 B8 Fixed data-1 B8 Fixed data-1 B9 (Modified data. Copy the data built in the same model.) BB to BD Fixed data-1 COPY Fixed data-1 BE Fixed data-2 BF to C9 Fixed data-1 CCA Fixed data-1	3A to 41	Fixed data-1
45 46 47 to 9F Fixed data-1 A0 Fixed data-2 A1 Fixed data-1 A2 Fixed data-2 A3 to AB Fixed data-1 AC Fixed data-2 AD (Modified data. Copy the data built in the same model.) AF B0 to B1 Fixed data-1 B2 Fixed data-1 B4 Fixed data-1 B4 Fixed data-1 B5 to B7 Fixed data-1 B8 Fixed data-1 B8 Fixed data-1 B8 Fixed data-1 B8 Fixed data-1 B8 Fixed data-1 B8 Fixed data-1 B8 Fixed data-2 B9 (Modified data. Copy the data built in the same model.) BB to BD Fixed data-1 BE Fixed data-2 CD to CE Fixed data-1 CCA Fixed data-1 CCA Fixed data-1 CCA Fixed data-1 CCB Fixed data-1	42	Fixed data-2
46 47 to 9F Fixed data-1 A0 Fixed data-2 A1 Fixed data-1 A2 Fixed data-2 A3 to AB Fixed data-1 AC Fixed data-2 AD (Modified data. Copy the data built in the same model.) AF model.) AF Fixed data-1 B2 Fixed data-2 B3 Fixed data-1 B4 Fixed data-1 B4 Fixed data-1 B8 Fixed data-1 B8 Fixed data-1 B8 Fixed data-1 B8 Fixed data-1 B9 (Modified data. Copy the data built in the same model.) BB to BD Fixed data-1 BE Fixed data-2 BF to C9 Fixed data-1 CCA Fixed data-1 CCA Fixed data-1 CCB CC CD to CE Fixed data-1 CF Fixed data-1 CF Fixed data-1 CF Fixed data-2 D0 to DC Fixed data-1 DD Fixed data-1 DD Fixed data-2 DE to E4 Fixed data-2 DE to E4 Fixed data-1 E5 Fixed data-2	43 to 44	Fixed data-1
47 to 9F Fixed data-1 A0 Fixed data-2 A1 Fixed data-1 A2 Fixed data-2 A3 to AB Fixed data-1 AC Fixed data-2 AD (Modified data. Copy the data built in the same model.) AF B0 to B1 Fixed data-1 B2 Fixed data-2 B3 Fixed data-1 B4 Fixed data-1 B4 Fixed data-1 B8 Fixed data-1 B8 Fixed data-1 B8 Fixed data-1 B8 Fixed data-1 B8 Fixed data-1 B8 Fixed data-1 B9 (Modified data. Copy the data built in the same model.) BB to BD Fixed data-1 BE Fixed data-2 BF to C9 Fixed data-1 CCA Fixed data-1 CCA Fixed data-1 CCB CC CD to CE Fixed data-1 CF Fixed data-1 CF Fixed data-2 D0 to DC Fixed data-1 DD Fixed data-2 DE to E4 Fixed data-2 DE to E4 Fixed data-2 DE to E4 Fixed data-2 E5 Fixed data-2 DE to E4 Fixed data-2	45	Fixed data-2
A0 Fixed data-2 A1 Fixed data-1 A2 Fixed data-2 A3 to AB Fixed data-1 AC Fixed data-2 AD (Modified data. Copy the data built in the same model.) AF B0 to B1 Fixed data-1 B2 Fixed data-2 B3 Fixed data-1 B4 Fixed data-1 B4 Fixed data-1 B8 Fixed data-1 B8 Fixed data-1 B8 Fixed data-1 B9 (Modified data. Copy the data built in the same model.) BB to BD Fixed data-1 BE Fixed data-2 CD Fixed data-1 CCA Fixed data-1 CCA CB CC CD to CE Fixed data-1 CF Fixed data-1 DD Fixed data-1 DD Fixed data-1 DD Fixed data-1 DD Fixed data-1 DD Fixed data-1 E5 Fixed data-2 DE to E4 Fixed data-1 E5 Fixed data-2	46	
A1 Fixed data-1 A2 Fixed data-2 A3 to AB Fixed data-1 AC Fixed data-2 (Modified data. Copy the data built in the same model.) AF B0 to B1 Fixed data-1 B2 Fixed data-2 B3 Fixed data-1 B4 Fixed data-1 B4 Fixed data-2 B5 to B7 Fixed data-1 B8 Fixed data-2 B9 (Modified data. Copy the data built in the same model.) BB to BD Fixed data-1 BE Fixed data-2 CA Fixed data-1 CC Fixed data-1 CC Fixed data-1 CF Fixed data-1 CF Fixed data-1 DD Fixed data-1 DD Fixed data-1 DD Fixed data-1 DD Fixed data-1 DD Fixed data-1 DD Fixed data-1 E5 Fixed data-2	47 to 9F	Fixed data-1
A2 Fixed data-2 A3 to AB Fixed data-1 AC Fixed data-2 (Modified data. Copy the data built in the same model.) AF B0 to B1 Fixed data-1 B2 Fixed data-2 B3 Fixed data-1 B4 Fixed data-1 B8 Fixed data-1 B8 Fixed data-1 B8 Fixed data-1 B8 Fixed data-1 B9 (Modified data. Copy the data built in the same model.) BB to BD Fixed data-1 BE Fixed data-2 BF to C9 Fixed data-1 CA Fixed data-1 CA Fixed data-1 CCB CD to CE Fixed data-1 CF Fixed data-2 D0 to DC Fixed data-1 DD Fixed data-1 DD Fixed data-2 DE to E4 Fixed data-1 E5 Fixed data-2	A0	Fixed data-2
A3 to AB Fixed data-1 AC Fixed data-2 (Modified data. Copy the data built in the same model.) AF model.)  B0 to B1 Fixed data-1 B2 Fixed data-2 B3 Fixed data-1 B4 Fixed data-2 B5 to B7 Fixed data-1 B8 Fixed data-2 B9 (Modified data. Copy the data built in the same model.) BB to BD Fixed data-1 BE Fixed data-2 BF to C9 Fixed data-1 CA Fixed data-1 CCA Fixed data-1 CCB CC CD to CE Fixed data-1 CF Fixed data-1 CF Fixed data-2 DD to DC Fixed data-1 DD Fixed data-1 DD Fixed data-2 DE to E4 Fixed data-2 DE to E4 Fixed data-2	A1	Fixed data-1
AC Fixed data-2 (Modified data. Copy the data built in the same model.)  AF  B0 to B1 Fixed data-1  B2 Fixed data-2  B3 Fixed data-2  B5 to B7 Fixed data-1  B8 Fixed data-2  B9 (Modified data. Copy the data built in the same model.)  BB to BD Fixed data-1  BE Fixed data-2  BF to C9 Fixed data-1  CA Fixed data-1  CA Fixed data-1  CCB CC  CD to CE Fixed data-1  CF Fixed data-1  DD Fixed data-1  DD Fixed data-2  DE to E4 Fixed data-1  E5 Fixed data-2	A2	Fixed data-2
AD (Modified data. Copy the data built in the same model.)  AF  B0 to B1 Fixed data-1  B2 Fixed data-2  B3 Fixed data-2  B5 to B7 Fixed data-1  B8 Fixed data-2  B9 (Modified data. Copy the data built in the same model.)  BB to BD Fixed data-1  BE Fixed data-2  BF to C9 Fixed data-1  CA Fixed data-2  CB CC  CD to CE Fixed data-1  CF Fixed data-1  DD Fixed data-1  DD Fixed data-1  DD Fixed data-1  DD Fixed data-2  DE to E4 Fixed data-1  E5 Fixed data-2	A3 to AB	Fixed data-1
AE AF B0 to B1 Fixed data-1 B2 Fixed data-2 B3 Fixed data-2 B5 to B7 Fixed data-1 B8 Fixed data-1 B8 Fixed data-2 B9 (Modified data. Copy the data built in the same model.) BB to BD Fixed data-1 BE Fixed data-2 BF to C9 Fixed data-1 CA Fixed data-1 CA Fixed data-1 CCB CC CD to CE Fixed data-1 CF Fixed data-1 DD Fixed data-1 DD Fixed data-1 DD Fixed data-1 DD Fixed data-1 DD Fixed data-1 DD Fixed data-1 DD Fixed data-2 DE to E4 Fixed data-2 Fixed data-1 Fixed data-1 Fixed data-2 DE to E4 Fixed data-2 Fixed data-1 Fixed data-1 Fixed data-2 DE to E4 Fixed data-2 Fixed data-1 Fixed data-2 DE to E4 Fixed data-2	AC	Fixed data-2
AF B0 to B1 Fixed data-1 B2 Fixed data-2 B3 Fixed data-2 B5 to B7 Fixed data-1 B8 Fixed data-2 B9 (Modified data. Copy the data built in the same model.) BB to BD Fixed data-1 BE Fixed data-2 BF to C9 Fixed data-1 CA Fixed data-1 CA Fixed data-1 CCB CC CD to CE Fixed data-1 CF Fixed data-1 DD Fixed data-1 DD Fixed data-1 DD Fixed data-1 DD Fixed data-1 DD Fixed data-1 E5 Fixed data-2 Fixed data-1	AD	(Modified data. Copy the data built in the same
B0 to B1 Fixed data-1 B2 Fixed data-2 B3 Fixed data-1 B4 Fixed data-2 B5 to B7 Fixed data-1 B8 Fixed data-2 B9 (Modified data. Copy the data built in the same model.) BB to BD Fixed data-1 BE Fixed data-2 BF to C9 Fixed data-1 CA Fixed data-2 CB CC CD to CE Fixed data-1 CF Fixed data-1 CF Fixed data-1 DD Fixed data-1 DD Fixed data-1 DD Fixed data-2 DE to E4 Fixed data-1 E5 Fixed data-2	AE	model.)
B2 Fixed data-2 B3 Fixed data-1 B4 Fixed data-2 B5 to B7 Fixed data-1 B8 Fixed data-2 B9 (Modified data. Copy the data built in the same model.) BB to BD Fixed data-1 BE Fixed data-2 BF to C9 Fixed data-1 CA Fixed data-2 CB CC CD to CE Fixed data-1 CF Fixed data-2 D0 to DC Fixed data-1 DD Fixed data-1 DD Fixed data-2 DE to E4 Fixed data-1 E5 Fixed data-2	AF	
B3 Fixed data-1 B4 Fixed data-2 B5 to B7 Fixed data-1 B8 Fixed data-2 B9 (Modified data. Copy the data built in the same model.) BB to BD Fixed data-1 BE Fixed data-2 BF to C9 Fixed data-1 CA Fixed data-2 CB CC CD to CE Fixed data-1 CF Fixed data-2 D0 to DC Fixed data-1 DD Fixed data-2 DE to E4 Fixed data-1 E5 Fixed data-2	B0 to B1	Fixed data-1
B4 Fixed data-2 B5 to B7 Fixed data-1 B8 Fixed data-2 (Modified data. Copy the data built in the same model.) BB to BD Fixed data-1 BE Fixed data-2 BF to C9 Fixed data-1 CA Fixed data-2 CB CC CD to CE Fixed data-1 CF Fixed data-2 D0 to DC Fixed data-1 DD Fixed data-1 DD Fixed data-1 E5 Fixed data-2 Fixed data-2	B2	Fixed data-2
B5 to B7 Fixed data-1  B8 Fixed data-2  B9 (Modified data. Copy the data built in the same model.)  BB to BD Fixed data-1  BE Fixed data-2  BF to C9 Fixed data-1  CA Fixed data-2  CB CC  CD to CE Fixed data-1  CF Fixed data-2  D0 to DC Fixed data-1  DD Fixed data-1  DD Fixed data-2  DE to E4 Fixed data-1  E5 Fixed data-2	В3	Fixed data-1
B8 Fixed data-2  B9 (Modified data. Copy the data built in the same model.)  BB to BD Fixed data-1  BE Fixed data-2  BF to C9 Fixed data-1  CA Fixed data-2  CB CC  CD to CE Fixed data-1  CF Fixed data-2  D0 to DC Fixed data-1  DD Fixed data-2  DE to E4 Fixed data-1  E5 Fixed data-2	B4	Fixed data-2
B9 (Modified data. Copy the data built in the same model.)  BB to BD Fixed data-1  BE Fixed data-2  BF to C9 Fixed data-1  CA Fixed data-2  CB CC  CD to CE Fixed data-1  CF Fixed data-2  D0 to DC Fixed data-1  DD Fixed data-2  DE to E4 Fixed data-1  E5 Fixed data-2	B5 to B7	Fixed data-1
BA model.)  BB to BD Fixed data-1  BE Fixed data-2  BF to C9 Fixed data-1  CA Fixed data-2  CB  CC  CD to CE Fixed data-1  CF Fixed data-2  D0 to DC Fixed data-1  DD Fixed data-1  DD Fixed data-2  DE to E4 Fixed data-1  E5 Fixed data-2	В8	Fixed data-2
BB to BD Fixed data-1 BE Fixed data-2 BF to C9 Fixed data-1 CA Fixed data-2 CB CC CD to CE Fixed data-1 CF Fixed data-2 D0 to DC Fixed data-1 DD Fixed data-2 DE to E4 Fixed data-1 E5 Fixed data-2	В9	(Modified data. Copy the data built in the same
BE Fixed data-2 BF to C9 Fixed data-1 CA Fixed data-2 CB CC CD to CE Fixed data-1 CF Fixed data-2 D0 to DC Fixed data-1 DD Fixed data-2 DE to E4 Fixed data-1 E5 Fixed data-2	BA	model.)
BF to C9 Fixed data-1  CA Fixed data-2  CB  CC  CD to CE Fixed data-1  CF Fixed data-2  D0 to DC Fixed data-1  DD Fixed data-2  DE to E4 Fixed data-1  E5 Fixed data-2	BB to BD	Fixed data-1
CA Fixed data-2 CB CC CD to CE Fixed data-1 CF Fixed data-2 D0 to DC Fixed data-1 DD Fixed data-2 DE to E4 Fixed data-1 E5 Fixed data-2	BE	Fixed data-2
CB CC CD to CE Fixed data-1 CF Fixed data-2 D0 to DC Fixed data-1 DD Fixed data-2 DE to E4 Fixed data-1 E5 Fixed data-2	BF to C9	Fixed data-1
CC CD to CE Fixed data-1 CF Fixed data-2 D0 to DC Fixed data-1 DD Fixed data-2 DE to E4 Fixed data-1 E5 Fixed data-2	CA	Fixed data-2
CD to CE Fixed data-1 CF Fixed data-2 D0 to DC Fixed data-1 DD Fixed data-2 DE to E4 Fixed data-1 E5 Fixed data-2	CB	
CF Fixed data-2 D0 to DC Fixed data-1 DD Fixed data-2 DE to E4 Fixed data-1 E5 Fixed data-2	CC	
D0 to DC Fixed data-1 DD Fixed data-2 DE to E4 Fixed data-1 E5 Fixed data-2	CD to CE	Fixed data-1
DD Fixed data-2 DE to E4 Fixed data-1 E5 Fixed data-2	CF	Fixed data-2
DE to E4 Fixed data-1 E5 Fixed data-2	D0 to DC	Fixed data-1
E5 Fixed data-2	DD	Fixed data-2
	DE to E4	Fixed data-1
E6 to EE Eined data 1	E5	Fixed data-2
EO 10 FF   Fixed data-1	E6 to FF	Fixed data-1

Table. 5-1-12.

#### 1-3. CAMERA SYSTEM ADJUSTMENTS

Before perform the camera system adjustments, check that the specified values of "VIDEO SYSTEM ADJUSTMENTS" are satisfied.

And check that the data of page: 0, address: 10 is "00". If not, set data: 00 to this address.

#### 1. HALL Adjustment RadarW

For detecting the position of the lens iris, adjust AMP gain and offset.

Subject	Not required
Measurement Point	Display data of page 1 (Note1)
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	13, 14, 15
Specified Value 1	15 to 19
Specified Value 2	89 to 8D

**Note1:** Displayed data of page 1 of the adjustment remote commander.

1:00:XX

IRIS display data

**Note2:** The data of page: 0, address: 10 must be "00".

**Switch setting:** 

POWER .......CAMERA

#### Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	94	17	Set the data.
3	6	95	8B	Set the data.
4	6	01	6D	Set the data, and press PAUSE button.
5	6	02		Check that the data changes to "01". (Note3)
6	6	01	00	Set the data, and press PAUSE button.

**Note3:** The adjustment data will be automatically input to page: F, address: 13, 14, 15.

### Checking method:

Order	Page	Address	Data	Procedure
1	0	03	03	Set the data.
2	6	01	01	Set the data, and press PAUSE button.
3	1			Check that the IRIS display data (Note1) satisfies the specified value 1.
4	6	01	03	Set the data, and press PAUSE button.
5	1			Check that the IRIS display data (Note1) satisfies the specified value.2.

Order	Page	Address	Data	Procedure
1	6	94	00	Set the data.
2	6	95	00	Set the data.
3	0	03	00	Set the data.
4	6	01	00	Set the data, and press PAUSE button.
5	0	01	00	Set the data.

## 2. Flange Back Adjustment RadarW (Using Minipattern Box)

The inner focus lens flange back adjustment is carried out automatically. In whichever case, the focus will be deviated during auto focusing/manual focusing.

	-
Subject	Siemens star chart with ND filter for the minipattern box (Note1)
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	48 to 58

Note1: Dark Siemens star chart.

**Note2:** This adjustment should be carried out upon completion of "HALL"

adjustment".

**Note3:** Make the lens horizontal and perform this adjustment.

**Note4:** The data of page: 0, address: 10 must be "00".

**Note5:** Check that the data of page: 6, address: 02 is "00". If not, set data:

00 to this address, and press the PAUSE button.

#### Switch setting:

1)	POWER	CAMERA
2)	NIGHT SHOT	OFF
3)	COLOR SLOW SHUTTER	OFF

#### **Preparations:**

 The minipattern box is installed as shown in the following figure.

Note: The attachment lenses are not used.

- 2) Install the minipattern box so that the distance between it and the front of the lens of the camcorder is less than 3cm.
- 3) Make the height of the minipattern box and the camcorder equal.
- Check that the output voltage of the regulated power supply is the specified voltage.
- Check that at both the zoom lens TELE end and WIDE end, the center of the Siemens star chart and center of the exposure screen coincide.

Specified voltage:

The specified voltage varies according to the minipattern box, so adjust the power supply output voltage to the specified voltage written on the sheet which is supplied with the minipattern box.

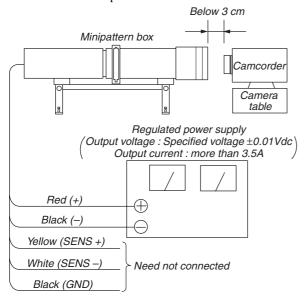


Fig. 5-1-7.

#### Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	01	13	Set the data, and press PAUSE button.
3	6	01	27	Set the data, and press PAUSE button.
4	6	02		Check that the data changes to "01". (Note6)

**Note6:** The adjustment data will be automatically input to page: F, address: 48 to 58

Order	Page	Address	Data	Procedure
1	0	01	00	Set the data.
2				Turn off the power and turn on again.
3				Perform "Flange Back Check".

#### 3. Flange Back Adjustment (Using Flange Back Adjustment Chart and Subject More Than 500m Away)

The inner focus lens flange back adjustment is carried out automatically. In whichever case, the focus will be deviated during auto focusing/manual focusing.

## 3-1. Flange Back Adjustment (1) RadarW

Subject	Flange back adjustment chart (2.0 m from the front of the protection glass) (Luminance: 350 ± 50 lux)
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	48 to 58

**Note1:** This adjustment should be carried out upon completion of "HALL adjustment".

**Note2:** Make the lens horizontal and perform this adjustment.

Note3: The data of page: 0, address: 10 must be "00".

Note4: Check that the data of page: 6, address: 02 is "00". If not, set data:

00 to this address, and press the PAUSE button.

#### Switch setting:

1)	POWER	CAMERA
2)	NIGHT SHOT	OFF
3)	COLOR SLOW SHUTTER	OFF

#### Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	01	13	Set the data, and press PAUSE button.
3	6	01	15	Set the data, and press PAUSE button.
4	6	02		Check that the data changes to "01". (Note5)

**Note5:** The adjustment data will be automatically input to page: F, address: 48 to 58.

#### **Processing after Completing Adjustments:**

Order	Page	Address	Data	Procedure
1				Turn off the power and turn on again.
2				Perform "Flange Back Adjustment (2)"

## 3-2. Flange Back Adjustment (2) RadarW

Perform this adjustment after performing "Flange Back Adjustment (1)".

(1)	
Subject	Subject more than 500m away (Subjects with clear contrast such as buildings, etc.)
Measurement Point	Check operation on TV monitor
Measuring Instrument	
Adjustment Page	F
Adjustment Address	48 to 58

**Note1:** Make the lens horizontal and perform this adjustment.

**Note2:** The data of page: 0, address: 10 must be "00".

**Note3:** Check that the data of page: 6, address: 02 is "00". If not, set data: 00 to this address, and press the PAUSE button.

#### Switch setting:

1)	POWER	CAMERA
2)	NIGHT SHOT	OFF
3)	COLOR SLOW SHUTTER	OFF

#### **Preparations:**

1) Set the zoom lens to the TELE end and expose a subject that is more than 500m away (subject with clear contrast such as building, etc.). (Nearby subjects less than 500m away should not be in the screen.)

#### Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	01	13	Set the data, and press PAUSE button.
3				Place a ND filter on the lens so that the optimum image is obtain.
4	6	01	29	Set the data, and press PAUSE button.
5	6	02		Check that the data changes to "01". (Note4)

**Note4:** The adjustment data will be automatically input to page: F, address:

Order	Page	Address	Data	Procedure
1	0	01	00	Set the data.
2				Turn off the power and turn on again.
3				Perform "Flange Back Check".

#### 4. Flange Back Check

Subject	Siemens star
	(2.0m from the front of the lens)
	(Luminance : approx. 200 lux)
Measurement Point	Check operation on TV monitor
Measuring Instrument	
Specified Value	Focused at the TELE end and WIDE
	end.

**Note1:** The data of page: 0, address: 10 must be "00".

#### **Switch setting:**

1)	POWER	. CAMERA
-	NIGHT SHOT	
3)	DIGITAL ZOOM (Menu display)	OFF
4)	STEADY SHOT (Menu display)	OFF

**Note2:** When the auto focus is ON, the lens can be checked if it is focused or not by observing the data on the page 1 of the adjustment remote commander.

- 1) Select page: 0, address: 03, and set data: 0F.
- 2) Page 1 shows the state of the focus.

1:00: XX
Odd: Focused
Even: Unfocused

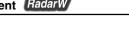
#### Checking method:

- 1) Place the Siemens star 2.0m from the front of the lens.
- To open the IRIS, decrease the luminous intensity to the Siemens star up to a point before noise appear on the image.
- 3) Shoot the Siemens star with the zoom TELE end.
- 4) Turn on the auto focus.
- 5) Check that the lens is focused (Note2).
- 6) Select page: 6, address: 21, and set data: 10.
- 7) Shoot the Siemens star with the zoom WIDE end.
- 8) Observe the TV monitor and check that the lens is focused.

#### **Processing after Completing Adjustments:**

- 1) Select page: 6, address: 21, and set data: 00.
- 2) Select page: 0, address: 03, and set data: 00.

## 5. Mechanical Shutter Adjustment RadarW



Adjustment Page	F
Adjustment Address	76 to 8F

Note1: The data of page: 0, address: 10 must be "00".

#### Input method:

- 1) Select page: 0, address: 01, and set data: 01.
- Input the following data to page: F, addresses: 76 to 8F.
   Note2: Press the PAUSE button of the adjustment remote commander each time to set the data.

Address	Data
76	40
77	00
78	34
79	00
7A	30
7B	00
7C	2A
7D	00
7E	28
7F	00
80	40
81	3A
82	31
83	31
84	35
85	1E
86	80
87	80
88	80
89	80
8A	80
8B	80
8C	03
8D	80
8E	80
8F	80

3) Select page: 0, address: 01, and set data: 00.

## 6. Black Defective CCD Adjustment RadarW

	ь.	-		-	
7		4		-1	11
15	10	0	-1	a'	W,
_	-	-	-		ш

Subject	Clear chart (All white) (Note1) (Approx. 40cm from the front of the lens)
Adjustment Page	1E (Note2)
Adjustment Address	20 to 2F

Note1: Shoot the clear chart with the zoom WIDE end. And adjust the direction of the camera so that the whole of the screen is white.

Note2: When reading or writing the 1E page data, select page: 0, address: 10, and set data: 01, then select E page. The 1E page can be chosen by this data setting.

After reading or writing, reset the data of page: 0, address: 10 to

Note3: This adjustment should be carried out upon completion of the following adjustment.

Flange Back Adjustment

**Note4:** Check that the data of page: 6, address: 02 is "00". If not, set data: 00 to this address, and press the PAUSE button.

#### Switch setting:

1)	POWER	. CAMERA
2)	NIGHT SHOT	OFF

#### Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	0	10	00	Set the data.
3	6	2C	01	Set the data.
4	6	9C	01	Set the data.
5	6	90	80	Set the data.
6	6	91	01	Set the data.
7	6	92	00	Set the data.
8	6	93	01	Set the data.
9	6	01	79	Set the data, and press PAUSE button.
10	6	01	8D	Set the data, and press PAUSE button.
11	6	02		Check that the data changes to "01". (Note5)

Note5: The adjustment data will be automatically input to page: 1E, address: 20 to 2F.

#### **Processing after Completing Adjustments:**

Order	Page	Address	Data	Procedure
1	0	10	00	Set the data.
2	6	01	00	Set the data, and press PAUSE button.
3	6	2C	00	Set the data.
4	6	9C	00	Set the data.
5	6	90	00	Set the data.
6	6	91	00	Set the data.
7	6	92	00	Set the data.
8	6	93	00	Set the data.
9	0	01	00	Set the data.

#### 7. Picture Frame Setting

Subject	Color bar chart
	(Color reproduction adjustment frame)
	(1.5m from the front of the lens)
Measurement Point	Video output terminal
Measuring Instrument	Oscilloscope and TV monitor
Specified Value	A=B, C=D, E=F

Note1: The following adjustments should be carried out upon completion of "Flange back adjustment".

Note2: The data of page: 0, address: 10 must be "00".

#### Switch setting:

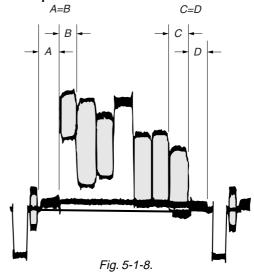
ERA
.OFF
.OFF
.OFF

#### **Setting method:**

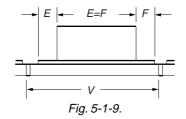
- 1) Adjust the zoom and the camera direction, and set to the specified position.
- Mark the position of the picture frame on the monitor display, and adjust the picture frame to this position in following adjustments using "Color reproduction adjustment frame".

#### Check on the oscilloscope

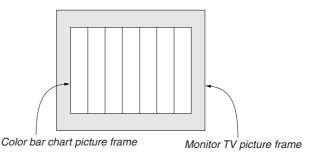
#### 1. Horizontal period



## 2. Vertical period



#### Check on the monitor TV (Underscanned mode)



#### 8. Color Reproduction Adjustment

Adjust the color Separation matrix coefficient so that proper color reproduction is produced.

Subject	Color bar chart (Color reproduction adjustment frame)
Measurement Point	Video output terminal
Measuring Instrument	Vectorscope
Adjustment Page	F
Adjustment Address	37, 39, 40, 41
Specified Value	All color luminance points should settle within each color reproduction frame.

Note1: The data of page: 0, address: 10 must be "00".

Note2: NTSC model: DCR-TRV740/TRV840
PAL model: DCR-TRV738E/TRV740E

#### Switch setting:

1)	POWER	CAMERA
2)	NIGHT SHOT	OFF
3)	DIGITAL ZOOM (Menu display)	OFF
4)	STEADY SHOT (Menu display)	OFF

#### Adjusting method:

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 6, address: 9D, set data: 17.
- 3) Select page: 6, address: 01, set data: 3D, and press the PAUSE button.
- Select page: F, address: F0, set following data, and press the PAUSE button.

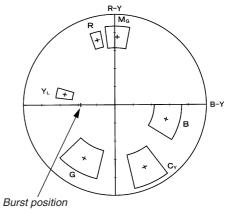
37 (NTSC), B7 (PAL)

- 5) Adjust the GAIN and PHASE of the vectorscope, and adjust the burst luminance point to the burst position of the color reproduction frame.
- 6) Change the data of page: F, address: 37, 39, 40 and 41, settle each color luminance point in each color reproduction frame.
  Note: Be sure to press the PAUSE button of the adjustment remote commander before changing the addresses. If not, the new data will not be written to the memory.

### **Processing after Completing Adjustments:**

- Select page: 6, address: 01, set data: 00, and press the PAUSE button
- 2) Select page: 6, address: 9D, and set data: 00.
- 3) Select page: 0, address: 01, and set data: 00.

#### For NTSC model



#### For PAL model

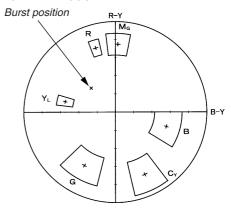


Fig. 5-1-11.

#### 9. Auto White Balance & LV Standard Data Input RadarW

Adjust the white balance reference at 3200K, and adjust the normal coefficient of the light value.

Subject	Clear chart
	(Color reproduction adjustment frame)
Measurement Point	Display data of page 1 (Note5)
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	1A, 1B, 30 to 33
Specified Value	0FF0 to 1010

Note1: This adjustment should be carried out upon completion of "Color reproduction adjustments".

Note2: After the power is turned on, this adjustment can be done only

**Note3:** The data of page: 0, address: 10 must be "00".

Check that the data of page: 6, address: 02 is "00". If not, set data: 00 to this address, and press the PAUSE button.

**Note5:** Displayed data of page 1 of the adjustment remote commander.

1: XX: XX-Display data

#### **Switch setting:**

1)	POWER	CAMERA
2)	NIGHT SHOT	OFF
3)	DIGITAL ZOOM (Menu display)	OFF
4)	STEADY SHOT (Menu display)	OFF

#### Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	16	02	Set the data.
3				Wait for 2 sec.
4	6	01	11	Set the data, and press PAUSE button.
5	6	01	0D	Set the data, and press PAUSE button.
6	6	02		Check that the data changes to "01". (Note6)
7	0	03	1E	Set the data.
8	1			Check that the display data (Note5) satisfies the specified value.

**Note6:** The adjustment data will be automatically input to page: F, address: 1A, 1B, 30 to 33.

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	6	16	00	Set the data.
3	0	03	00	Set the data.
4	0	01	00	Set the data.
5				Perform "Auto White Balance Adjustment".

### 10. Auto White Balance Adjustment RadarW

Adjust to the proper auto white balance output data. If it is not correct, auto white balance and color reproducibility will be poor.

<u> </u>	
Subject	Clear chart
	(Color reproduction adjustment frame)
Filter	Filter C14 for color temperature
	correction
Measurement Point	Display data of page 1 (Note4)
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	34, 35
Specified Value	R ratio: 2BD8 to 2CD8
	B ratio: 5970 to 5A70

Note1: This adjustment should be carried out upon completion of "Auto White Balance & LV Standard Data Input".

Note2: After the power is turned on, this adjustment can be done only

**Note3:** The data of page: 0, address: 10 must be "00".

**Note4:** Displayed data of page 1 of the adjustment remote commander.

1: XX: XX

Display data

### **Switch setting:**

2)	NIGHT SHOT	OFF
3)	DIGITAL ZOOM (Menu display)	OFF
	STEADY SHOT (Menu display)	

#### Adjusting method:

Order	Page	Address	Data	Procedure
1				Place the C14 filter for color temperature correction on the lens.
2	0	01	01	Set the data.
3	F	44		Write down the data.
4	F	44	2C	Set the data, and press PAUSE button.
5	F	45		Write down the data.
6	F	45	58	Set the data, and press PAUSE button.
7	F	46		Write down the data.
8	F	46	59	Set the data, and press PAUSE button.
9	F	47		Write down the data.
10	F	47	F0	Set the data, and press PAUSE button.
11	6	01	83	Set the data, and press PAUSE button.
12	6	01	81	Set the data, and press PAUSE button.
13	6	02		Check that the data changes to "01". (Note5)
14	6	01	3F	Set the data, and press PAUSE button.
15	0	03	04	Set the data.
16	1			Check that the display data (Note4) satisfies the R ratio specified value.
17	0	03	05	Set the data.
18	1			Check that the display data (Note4) satisfies the B ratio specified value.

**Note5:** The adjustment data will be automatically input to page: F, address: 34, 35.

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	F	44		Set the data that is written down at step 3, and press PAUSE button.
3	F	45		Set the data that is written down at step 5, and press PAUSE button.
4	F	46		Set the data that is written down at step 7, and press PAUSE button.
5	F	47		Set the data that is written down at step 9, and press PAUSE button.
6	0	03	00	Set the data.
7	0	01	00	Set the data.

## 11. White Balance Check RadarW

Subject	Clear chart
	(Color reproduction adjustment frame)
Filter	Filter C14 for color temperature
	correction
	ND filter 1.0 and 0.4 and 0.1
Measurement Point	Video output terminal
Measuring Instrument	Vectorscope
Specified Value	Fig. 5-1-12. A to B

**Note:** The data of page: 0, address: 10 must be "00".

## Switch setting:

1)	POWER	CAMERA
2)	NIGHT SHOT	OFF
3)	DIGITAL ZOOM (Menu display)	OFF
4)	STEADY SHOT (Menu display)	OFF

## Checking method:

Order	Page	Address	Data	Procedure
				Indoor white balance check
1				Check that the lens is not covered with either filter.
2	6	01	0F	Set the data, and press PAUSE button.
3				Check that the center of the white luminance point is within the circle shown Fig. 5-1-12. A.
4	6	01	00	Set the data, and press PAUSE button.
				Outdoor white balance check
5				Place the C14 filter on the lens.
6	6	01	3F	Set the data, and press PAUSE button.
7				Check that the center of the white luminance point is within the circle shown Fig. 5-1-12. B.
8				Remove the C14 filter.
				LV data check
9				Place the ND filter 1.5 (1.0 + 0.1 + 0.4) on the lens.
10	6	01	00	Set the data, and press PAUSE button.
11	0	03	06	Set the data.
12	1			Check that the display data (Note) satisfies the specified value. Specified value: 8000 to 8BC0

**Note:** Displayed data of the adjustment remote commander.  $1: \underline{XX:XX}$ 

-Display data

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE
				button.
2	0	03	00	Set the data.

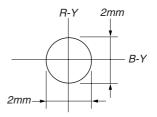


Fig. 5-1-12. (A)

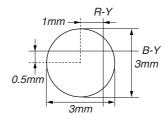


Fig. 5-1-12. (B)

### 12. Steady Shot Check



### **Precautions on the Parts Replacement**

There are two types of repair parts.

Type A: ENC03JA Type B: ENC03JB

Replace the broken sensor with a same type sensor. If replace with other type parts, the image will vibrate up and down or left and right during hand-shake correction operations.

### **Precautions on Angular Velocity Sensor**

The sensor incorporates a precision oscillator. Handle it with care as if it dropped, the balance of the oscillator will be disrupted and operations will not be performed properly.

Subject	Arbitrary
Measurement Point	Display data of page 1 (Note1)
Measuring Instrument	Adjustment remote commander
Specified Value	2B00 to 4B00

**Note1:** Displayed data of the adjustment remote commander.

 $1: \underline{XX:XX}$ 

———Display data

**Note2:** The data of page: 0, address: 10 must be "00".

#### **Switch setting:**

1)	STEADY SHOT (Menu display)	) ON
2)	700M	TELE and

#### Adjusting method:

Order	Page	Address	Data	Procedure
				Pitch sensor check (SI-032 board SE301)
1	0	03	11	Set the data.
2	1			Check that the display data (Note1) satisfies the specified value.  Specified value: 2B00 to 4B00
				Yaw sensor check (SI-032 board SE302)
3	0	03	12	Set the data.
4	1			Check that the display data (Note1) satisfies the specified value.  Specified value: 2B00 to 4B00

				•
Order	Page	Address	Data	Procedure
1	0	03	00	Set the data.
2				Move the camcorder, and check that the steady shot operations have been performed normally.

## 1-4. ELECTRONIC VIEWFINDER SYSTEM ADJUSTMENT

Note1: When replacing the LCD unit, be careful to prevent damages

caused by static electricity.

Note2: Before performing the adjustments, check the data of page: 0,

address: 10 is "00". If not, set data: 00 to this address.

**Note3:** Switch setting:

Note4: NTSC model: DCR-TRV740/TRV840

PAL model: DCR-TRV738E/TRV740E

#### [Adjusting connector]

Most of the measuring points for adjusting the viewfinder system are concentrated in CN1108 of VC-278 board.

Connect the Measuring Instruments via the CPC-13 jig (J-6082-443-A).

The following table shows the Pin No. and signal name of CN1108.

Pin No.	Signal Name	Pin No.	Signal Name
1	REG GND	11	VCO
2	N. C.	12	EVF VG
3	BPF MONI	13	RF SWP
4	N. C.	14	N. C.
5	PB RF	15	CAP FG
6	REG GND	16	RF MON
7	N. C.	17	N. C.
8	RF SWP	18	REG GND
9	N. C.	19	REG GND
10	N. C.	20	REG GND

Table 5-1-13.

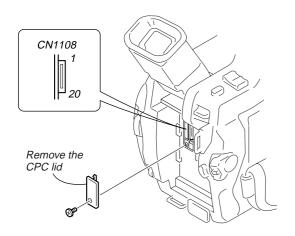


Fig. 5-1-13.

#### 1. VCO Adjustment (VC-278 board)

Set the VCO free-run frequency. If deviated, the EVF screen will be blurred.

Mode	Camera
Subject	Arbitrary
Measurement Point	Pin ① of CN1108 (VCO)
Measuring Instrument	Frequency counter
Adjustment Page	С
Adjustment Address	51, 52
Specified Value	$f = 15734 \pm 30$ Hz (NTSC)
	$f = 15625 \pm 30$ Hz (PAL)

**Note1:** The data of page: 0, address: 10 must be "00".

#### Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	С	51		Change the data and set the VCO frequency (f) to the specified value.
3	C	51		Press PAUSE button.
4	С	51		Read the data, and this data is named D <sub>51</sub> .
5				Convert D <sub>51</sub> to decimal notation, and obtain D <sub>51</sub> '. (Note1)
6				Calculate D52' using following equations (Decimal calculation) [NTSC model] When D51' $\leq$ 236 D52' = D51'+19 When D51' > 236 D52' = 255 [PAL model] When D51' $\geq$ 19 D52' = D51'-19 When D51' < 19 D52' = 00
7				Convert D52' to a hexadecimal number, and obtain D52. (Note)
8	С	52	D52	Set the data, and press PAUSE button.
9	0	01	00	Set the data.

Note2: Refer to "Table 5-4-1. Hexadecimal-decimal Conversion Table".

### 2. RGB AMP Adjustment (VC-278 board)

Set the D range of the RGB driver used to drive the LCD to the specified value. If deviated, the LCD screen will become blackish or saturated (whitish).

Mode	Camera
Subject	Arbitrary
Measurement Point	Pin ② of CN1108 (EVF VG)
Measuring Instrument	Oscilloscope
Adjustment Page	С
Adjustment Address	54
Specified Value	$A = 7.50 \pm 0.10 V (NTSC)$
	$A = 7.52 \pm 0.10 V (PAL)$

**Note:** The data of page: 0, address: 10 must be "00".

#### Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	С	54		Change the data and set the voltage (A) between the reversed waveform pedestal and non-reversed waveform pedestal to the specified value.
3	C	54		Press PAUSE button.
4	0	01	00	Set the data.

### 3. Contrast Adjustment (VC-278 board)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

Mode	Camera
Subject	Arbitrary
Measurement Point	Pin ② of CN1108 (EVF VG)
Measuring Instrument	Oscilloscope
Adjustment Page	С
Adjustment Address	58
Specified Value	$A = 2.49 \pm 0.10V (NTSC)$
	$A = 2.42 \pm 0.10 V (PAL)$

**Note:** The data of page: 0, address: 10 must be "00".

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	С	58		Change the data and set the voltage (A) between the 100 IRE and 0 IRE (pedestal) to the specified value. (The data should be "00" to "7F".)
3	C	58		Press PAUSE button.
4	0	01	00	Set the data.

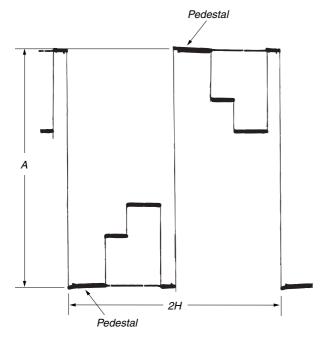


Fig. 5-1-14.

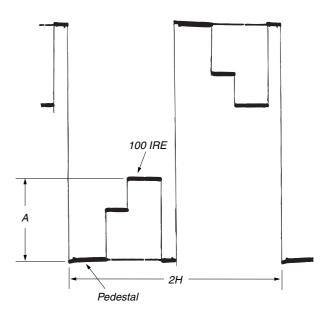


Fig. 5-1-15.

#### 1-5. LCD SYSTEM ADJUSTMENT

**Note1:** The back light (fluorescent tube) is driven by a high voltage AC power supply. Therefore, do not touch the back light holder to avoid electrical shock.

**Note2:** When replacing the LCD unit, be careful to prevent damages caused by static electricity.

**Note3:** Before performing the adjustments, check the data of page: 0, address: 10 is "00". If not, set data: 00 to this address.

**Note4:** Set the LCD BRIGHT (Menu display) to the center. Set the LCD COLOR (Menu display) to the center.

#### [Adjusting connector]

Most of the measuring points for adjusting the LCD system are concentrated in CN5502 of the PD-156/160 board. Connect the measuring instruments via the multi CPC jig (J-6082-311-A). The following table shows the Pin No. and signal name of CN5502.

#### PD-156 board

Pin No.	Signal Name	Pin No.	Signal Name
1	VB	2	XVD OUT
3	VG	4	PANEL COM
5	VR	6	PANEL ID
7	C-SYNC/XHD	8	XHD OUT
9	GND	10	GND

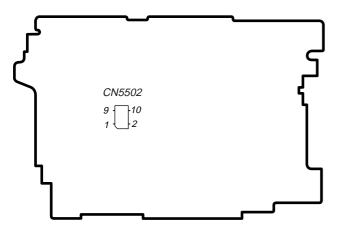
Table 5-1-14.

#### PD-160 board

Pin No.	Signal Name	Pin No.	Signal Name				
1	VB	2	XVD OUT				
3	VG	4	PSIG				
5	VR	6	MAKER CHECK				
7	XHD	8	XHD OUT				
9	GND	10	GND				

Table 5-1-15.

#### PD-156/160 board



#### 1-5-1. LCD Type Check

By measuring the resistor value between Pin **(6)** of CN5502 and GND, the type of LCD can be discriminated.

Resistor value	LCD type	PD board	DCR-
2.2kΩ	2.5 LCD TYPE SH (123k)	PD-156	TRV738E TRV740E *1
6.8kΩ	3.5 LCD TYPE CA (123k)	PD-156	TRV840
22kΩ	2.5 LCD TYPE SO (61k)	PD-160	TRV740 TRV740E *2
$47k\Omega$	3.5 LCD TYPE SO (123k)	PD-160	TRV840

\*1: AEP/EE/NE/RU model

\*2: E/AUS/HK/CH/JE model

When the type of LCD is "LCD TYPE CA" or "LCD TYPE SH", perform "1-5-2. LCD SYSTEM ADJUSTMENT (PD-156 board)" When the type of LCD is "LCD TYPE SO", perform "1-5-3. LCD SYSTEM ADJUSTMENT (PD-160 board)"

Abbreviation

HK : Hong Kong model
AUS : Australian model
CH : Chinese model
JE : Tourist model
EE : East European model

NE: North European model

RU: Russian model

#### 1-5-2. LCD SYSTEM ADJUSTMENT (PD-156 board)

### 1. VCO Adjustment (PD-156 board)

Set the VCO free-run frequency. If deviated, the LCD screen will be blurred.

Mode	VTR stop	
Signal	No signal	
Measurement Point	Pin ® of CN5502 (XHD OUT)	
Measuring Instrument	Frequency counter	
Adjustment Page	С	
Adjustment Address	61, 62	
Specified Value	f = 15734 ± 30Hz (NTSC)	
	$f = 15625 \pm 30$ Hz (PAL)	

Note1: NTSC model: DCR-TRV840

PAL model: DCR-TRV738E/TRV740E

Note2: Refer to "LCD Type Check" for the discrimination of the LCD

type.

**Note3:** The data of page: 0, address: 10 must be "00".

#### Adjusting method:

Aujusting methou:						
Order	Page	Address	Data	Procedure		
1	0	01	01	Set the data.		
2	С	61		Change the data and set the VCO frequency (f) to the specified value.		
3	C	61		Press PAUSE button.		
4	С	61		Read the data, and this data is named D <sub>61</sub> .		
5				Convert D <sub>61</sub> to decimal notation, and obtain D <sub>61</sub> '. (Note2)		
6				Calculate D62' using following equations (Decimal calculation) [NTSC 3.5 LCD TYPE CA] When D61' $\leq$ 252 D62'=D61'+3 When D61'>252 D62'=255 [PAL 2.5 LCD TYPE SH] When D61' $\geq$ 20 D62'=D61'-20 When D61' $\leq$ 20 D62'=D61'-20 D62'=0		
7				Convert D <sub>62</sub> ' to a hexadecimal number, and obtain D <sub>62</sub> . (Note4)		
8	С	62	D62	Set the data, and press PAUSE button.		
9	0	01	00	Set the data.		

**Note4:** Refer to "Table 5-4-1. Hexadecimal-decimal Conversion Table".

#### 2. RGB AMP Adjustment (PD-156 board)

Set the D range of the RGB decoder used to drive the LCD to the specified value. If deviated, the LCD screen will become blackish or saturated (whitish).

Mode	VTR stop	
Signal	No signal	
Measurement Point	Pin ③ of CN5502 (VG) Ext. trigger: Pin ④ of CN5502 (PANEL COM)	
Measuring Instrument	Oscilloscope	
Adjustment Page	С	
Adjustment Address	64	
Specified Value	NTSC 3.5 LCD TYPE CA: $A = 3.22 \pm 0.05V$ PAL 2.5 LCD TYPE SH: $A = 3.55 \pm 0.05V$	

Note1: NTSC model: DCR-TRV840

PAL model: DCR-TRV738E/TRV740E

Note2: Refer to "LCD Type Check" for the discrimination of the LCD

type.

**Note3:** The data of page: 0, address: 10 must be "00".

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	С	64		Change the data and set the voltage (A) between the reversed waveform pedestal and non-reversed waveform pedestal to the specified value. (The data should be "00" to "3F".)
3	C	64		Press PAUSE button.
4	0	01	00	Set the data.

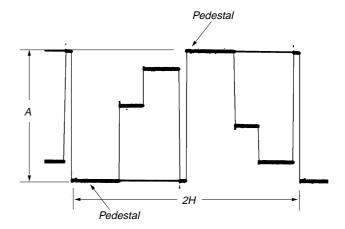


Fig. 5-1-16.

#### 3. Contrast Adjustment (PD-156 board)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

Mode	VTR stop	
Signal	No signal	
Measurement Point	Pin ③ of CN5502 (VG) Ext. trigger: Pin ④ of CN5502 (PANEL COM)	
Measuring Instrument	Oscilloscope	
Adjustment Page	С	
Adjustment Address	69	
Specified Value	NTSC 3.5 LCD TYPE CA: $A = 3.18 \pm 0.05V$ PAL 2.5 LCD TYPE SH: $A = 3.19 \pm 0.05V$	

Note1: NTSC model: DCR-TRV840

PAL model: DCR-TRV738E/TRV740E

Note2: Refer to "LCD Type Check" for the discrimination of the LCD

type

**Note3:** The data of page: 0, address: 10 must be "00".

#### Adjusting method:

_		0			
I	Order	Page	Address	Data	Procedure
I	1	0	01	01	Set the data.
	2	С	69		Change the data and set the voltage (A) between the 100 IRE and 0 IRE (pedestal) to the specified value. (The data should be "00" to "7F".)
	3	C	9		Press PAUSE button.
I	4	0	01	00	Set the data.

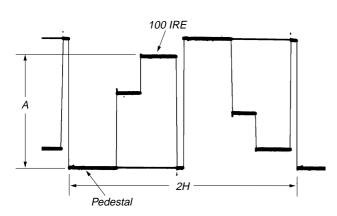


Fig. 5-1-17.

#### 4. COM AMP Adjustment (PD-156 board)

Set the common electrode drive signal level of LCD to the specified value.

Mode	VTR stop
Signal	No signal
Measurement Point	Pin 4 of CN5502 (PANEL COM)
Measuring Instrument	Oscilloscope
Adjustment Page	С
Adjustment Address	66
Specified Value	NTSC 3.5 LCD TYPE CA: $A = 5.80 \pm 0.05V$ PAL 2.5 LCD TYPE SH: $A = 6.16 \pm 0.05V$

Note1: NTSC model: DCR-TRV840

PAL model: DCR-TRV738E/TRV740E

Note2: Refer to "LCD Type Check" for the discrimination of the LCD

type.

**Note3:** The data of page: 0, address: 10 must be "00".

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	С	66		Change the data and set the PANEL COM signal level (A) to the specified value.
3	С	66		Press PAUSE button.
4	0	01	00	Set the data.

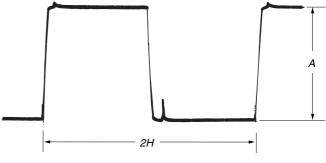


Fig. 5-1-18.

#### 5. V-COM Adjustment (PD-156 board)

Set the DC bias of the common electrode drive signal of LCD to the specified value.

If deviated, the LCD display will move, producing flicker and conspicuous vertical lines.

Mode	VTR stop	
Signal	No signal	
Measurement Point	Check on LCD display	
Measuring Instrument		
Adjustment Page	С	
Adjustment Address	63	
Specified Value	The brightness difference between the section A and section B is minimum.	

Note1: This adjustment should be carried out upon completion of the

following adjustments. RGB AMP Adjustment Contrast Adjustment COM AMP Adjustment

**Note2:** The data of page: 0, address: 10 must be "00".

#### Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	С	63		Change the data so that the brightness of the section A and that of the section B is equal.
3	C	63		Subtract 8 from the data.
4	C	63		Press PAUSE button.
5	0	01	00	Set the data.

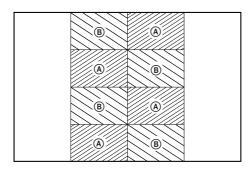


Fig. 5-1-19.

#### 6. White Balance Adjustment (PD-156 board)

Correct the white balance.

If deviated, the reproduction of the LCD screen may degenerate.

Mode	VTR stop
Signal	No signal
Measurement Point	Check on LCD screen
Measuring Instrument	
Adjustment Page	С
Adjustment Address	67, 68
Specified Value	The LCD screen should not be colored.

**Note1:** Check the white balance only when replacing the following parts. If necessary, adjust them.

1. LCD panel

2. Light induction plate

3. IC5501

**Note2:** The data of page: 0, address: 10 must be "00".

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	С	67		Set the following data, and press PAUSE button. 55 (NTSC 3.5 LCD TYPE CA) 84 (PAL 2.5 LCD TYPE SH)
3	С	68		Set the following data, and press PAUSE button. 3F (NTSC 3.5 LCD TYPE CA) 5F (PAL 2.5 LCD TYPE SH)
4	С	68		Check that the LCD screen is not colored. If not colored, proceed to step 10.
5	С	67		Change the data so that the LCD screen is not colored.
6	C	67		Press PAUSE button.
7	С	68		Change the data so that the LCD screen is not colored.
8	C	68		Press PAUSE button.
9	С	68		If the LCD screen is colored, repeat steps 5 to 9.
10	0	01	00	Set the data.

#### 1-5-3. LCD SYSTEM ADJUSTMENT (PD-160 board)

## 1. VCO Adjustment (PD-160 board)

Set the VCO free-run frequency. If deviated, the LCD screen will be blurred.

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ® of CN5502 (XHD OUT)
Measuring Instrument	Frequency counter
Adjustment Page	С
Adjustment Address	61, 62
Specified Value	$f = 15734 \pm 30$ Hz (NTSC)
	$f = 15625 \pm 30$ Hz (PAL)

Note1: NTSC model: DCR-TRV740/TRV840

PAL model: DCR-TRV740E

**Note2:** The data of page: 0, address: 10 must be "00".

#### Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	С	61		Change the data and set the VCO frequency (f) to the specified value.
3	C	61		Press PAUSE button.
4	С	61		Read the data, and this data is named D <sub>61</sub> .
5				Convert D <sub>61</sub> to decimal notation, and obtain D <sub>61</sub> '. (Note2)
6				Calculate D <sub>62</sub> ' using following equations (Decimal calculation) [NTSC 2.5 LCD] When D <sub>61</sub> ' $\leq$ 238 D <sub>62</sub> '= D <sub>61</sub> '+17 When D <sub>61</sub> '> 238 D <sub>62</sub> '= 255 [NTSC 3.5 LCD] When D <sub>61</sub> ' $\leq$ 247 D <sub>62</sub> '=D <sub>61</sub> '+8 When D <sub>61</sub> '> 247 D <sub>62</sub> '= 255 [PAL 2.5 LCD] When D <sub>61</sub> ' $\geq$ 17 D <sub>62</sub> '= 17 When D <sub>61</sub> ' $\geq$ 17 D <sub>62</sub> '= 17 When D <sub>61</sub> ' $\leq$ 17 D <sub>62</sub> '= 0
7				Convert D <sub>62</sub> ' to a hexadecimal number, and obtain D <sub>62</sub> . (Note3)
8	С	62	D62	Set the data, and press PAUSE button.
9	0	01	00	Set the data.

Note3: Refer to "Table 5-4-1. Hexadecimal-decimal Conversion Table".

#### 2. PSIG Gray Adjustment (PD-160 board)

Set the uniformity improvement signal to an appropriate level.

Mode	VTR stop
Signal	No signal
Measurement Point	Pin 4 of CN5502 (PSIG)
Measuring Instrument	Oscilloscope
Adjustment Page	С
Adjustment Address	66
Specified Value	$A = 5.00 \pm 0.1V$

Note: The data of page: 0, address: 10 must be "00".

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	С	66		Change the data and set the PSIG signal level (A) to the specified value. (The data should be "00" to "7F")
3	C	66		Press PAUSE button.
4	0	01	00	Set the data.

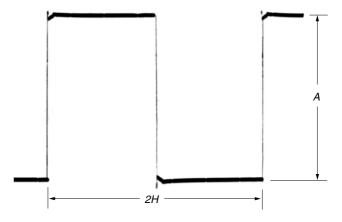


Fig. 5-1-20.

#### 3. RGB AMP Adjustment (PD-160 board)

Set the D range of the RGB decoder used to drive the LCD to the specified value. If deviated, the LCD screen will become blackish or saturated (whitish).

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ③ of CN5502 (VG) Ext. trigger: Pin ④ of CN5502 (PSIG)
Measuring Instrument	Oscilloscope
Adjustment Page	С
Adjustment Address	64
Specified Value	NTSC 2.5 LCD: $A = 7.68 \pm 0.05V$ NTSC 3.5 LCD: $A = 7.48 \pm 0.05V$ PAL 2.5 LCD: $A = 7.62 \pm 0.05V$

Note1: NTSC model: DCR-TRV740/TRV840 PAL model: DCR-TRV740E

**Note2:** The data of page: 0, address: 10 must be "00".

#### Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	С	64		Change the data and set the voltage (A) between the reversed waveform pedestal and non-reversed waveform pedestal to the specified value.
3	C	64		Press PAUSE button.
4	0	01	00	Set the data.

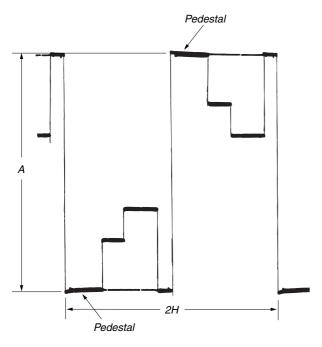


Fig. 5-1-21.

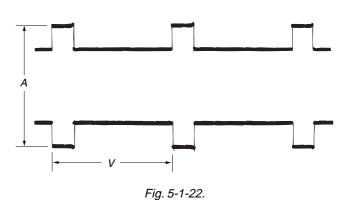
#### 4. Black Limit Adjustment (PD-160 board)

Set the dynamic range of the LCD driver to an appropriate level. If deviated, the LCD screen will become blackish or saturated (whitish).

Mode	VTR stop
Signal	No signal
Measurement Point	Pin 4 of CN5502 (PSIG)
Measuring Instrument	Oscilloscope
Adjustment Page	С
Adjustment Address	65
Specified Value	$A = 8.30 \pm 0.08V$

**Note:** The data of page: 0, address: 10 must be "00".

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	3	C4	61	Set the data.
3	3	C5		Set the following data. 58 (NTSC), 50 (PAL)
4	С	65		Change the data and set the PSIG signal amplitude (A) to the specified value. (The data should be "00" to "0F".)
5	C	65		Press PAUSE button.
6	3	C4	00	Set the data.
7	3	C5	00	Set the data.
8	0	01	00	Set the data.
9				Check that the specified value of "RGB AMP Adjustment" is satisfied.



### 5. Contrast Adjustment (PD-160 board)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ③ of CN5502 (VG) Ext. trigger: Pin ④ of CN5502 (PSIG)
Measuring Instrument	Oscilloscope
Adjustment Page	С
Adjustment Address	69
Specified Value	NTSC 2.5 LCD: $A = 2.72 \pm 0.05V$ NTSC 3.5 LCD: $A = 2.60 \pm 0.05V$ PAL 2.5 LCD: $A = 3.19 \pm 0.05V$

Note1: NTSC model: DCR-TRV740/TRV840 PAL model: DCR-TRV740E

**Note2:** The data of page: 0, address: 10 must be "00".

#### Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	С	69		Change the data and set the voltage (A) between the 100 IRE and 0 IRE (pedestal) to the specified value. (The data should be "00" to "7F".)
3	C	69		Press PAUSE button.
4	0	01	00	Set the data.

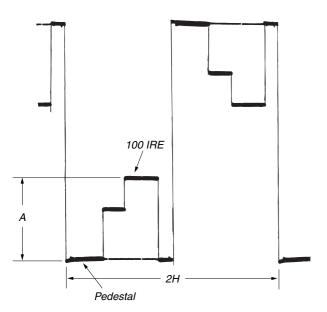


Fig. 5-1-23.

### 6. Center Level Adjustment (PD-160 board)

Set the video signal center level of LCD panel to an appropriate level.

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ③ of CN5502 (VG)
Measuring Instrument	Digital voltmeter
Adjustment Page	С
Adjustment Address	6A
Specified Value	$A = 7.00 \pm 0.03 Vdc$

**Note:** The data of page: 0, address: 10 must be "00".

Order	Page	Address	Data	Procedure	
1	0	01	01	Set the data.	
2	С	6A		Change the data and set the DC voltage (A) to the specified value (The data should be "00" to "7F".	
3	C	6A		Press PAUSE button.	
4	0	01	00	Set the data.	

#### 7. V-COM Adjustment (PD-160 board)

Set the DC bias of the common electrode drive signal of LCD to the specified value.

If deviated, the LCD display will move, producing flicker and conspicuous vertical lines.

Mode	VTR stop		
Signal	No signal		
Measurement Point	Check on LCD display		
Measuring Instrument			
Adjustment Page	С		
Adjustment Address	63		
Specified Value	The brightness difference between the section A and section B is minimum.		

Note1: This adjustment should be carried out upon completion of the

following adjustments. RGB AMP Adjustment Black Limit Adjustment Contrast Adjustment Center Level Adjustment

**Note2:** The data of page: 0, address: 10 must be "00".

#### Adjusting method:

Order	Page	Address	Data	Procedure	
1	0	01	01	Set the data.	
2	С	63		Change the data so that the brightness of the section A and that of the section B is equal. (The data should be "00" to "3F".	
3	С	63		Subtract 2 from the data.	
4	C	63		Press PAUSE button. Set the data.	
5	0	01	00		

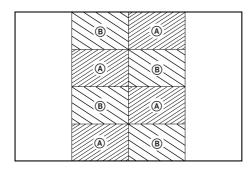


Fig. 5-1-24.

#### 8. White Balance Adjustment (PD-160 board)

Correct the white balance.

If deviated, the reproduction of the LCD screen may degenerate.

Mode	VTR stop	
Signal	No signal	
Measurement Point	Check on LCD screen	
Measuring Instrument		
Adjustment Page	С	
Adjustment Address	67, 68	
Specified Value	The LCD screen should not be colored.	

**Note1:** Check the white balance only when replacing the following parts. If necessary, adjust them.

1. LCD panel

2. Light induction plate

3. IC5501

**Note2:** The data of page: 0, address: 10 must be "00".

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	С	67		Set the following data, and press PAUSE button. 7E (NTSC 2.5 LCD) 7E (NTSC 3.5 LCD) 81 (PAL 2.5 LCD)
3	С	68		Set the following data, and press PAUSE button. 6C (NTSC 2.5 LCD) 78 (NTSC 3.5 LCD) 6F (PAL 2.5 LCD)
4	С	68		Check that the LCD screen is not colored. If not colored, proceed to step 10.
5	С	67		Change the data so that the LCD screen is not colored.
6	C	67		Press PAUSE button.
7	С	68		Change the data so that the LCD screen is not colored.
8	C	68		Press PAUSE button.
9	С	68		If the LCD screen is colored, repeat steps 5 to 9.
10	0	01	00	Set the data.

# 5-2. MECHANISM SECTION ADJUSTMENT

Mechanism Section adjustments, checks, and replacement of mechanism parts, refer to the separate volume "8mm Video Mechanism Adjustment Manual M2000 Mechanism".

#### 2-1. Hi8/STANDARD 8 MODE

**Note1:** Before performing the adjustments, check the data of page: 0, address: 10 is "00". If not, set data: 00 to this address.

#### 2-1-1. OPERATING WITHOUT CASSETTE

- Refer to "Section 2. DISASSEMBLY" and supply the power with the cabinet assembly removed. (So that the mechanical deck can be operated.)
- 2) Connect the adjustment remote commander to the LANC jack.
- 3) Turn on the HOLD switch of the adjustment remote commander.
- Close the cassette compartment without loading a cassette and complete loading.
- 5) Select page: 0, address: 01, and set data: 01.
- Select page: C, address: 3E, set data: 01, and press the PAUSE button of the adjustment remote commander.
- Select page: A, address: 10, set data: 10, and press the PAUSE button.
- 8) Disconnect the power supply of the unit, and connect it again.
- 9) Select page: 7, address: 62, and set data: 02.

By carrying out the above procedure, the unit can be operated without loading a cassette. (Note2)

Be sure to carry out "Processing after Operations" after checking the operations.

Set the data of page: D, address: 10 to "02", if the sensor ineffective mode, forced VTR power supply ON mode is to be used together.

**Note2:** Except for the camera recording mode and VTR recording mode.

#### [Procedure after checking operations]

- 1) Select page: 0, address: 01, and set data: 01.
- Select page: C, address: 3E, set data: 00, and press the PAUSE button.
- 3) Select page: D, address: 10, set data: 00, and press the PAUSE button
- Select page: A, address: 10, set data: 00, and press the PAUSE button.
- 5) Select page: 7, address: 62, and set data: 00.
- 6) Select page: 0, address: 01, and set data: 00.
- 7) Disconnect the power supply of the unit.

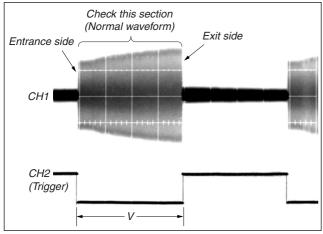


Fig. 5-2-1.

#### 2-1-2. TAPE PATH ADJUSTMENT

#### 1. Preparations for Adjustment

- 1) Clean the tape path face (tape guide, capstan shaft, pinch roller).
- 2) Connect the adjustment remote commander to the LANC jack.
- Turn on the HOLD switch of the adjustment remote commander.
- 4) Select page: 0, address: 01, and set data: 01.
- 5) Select page: 7, address: 62, and set data: 02.
- Select page: C, address: 3E, set data: 08, and press the PAUSE button of the adjustment remote commander.

(Be sure to perform "Processing after operation" after completing adjustments.)

 Connect the oscilloscope to VC-278 board CN1108 via CPC-13 jig (J-6082-443-A).

> Channel 1: VC-278 board, CN1108 Pin (5) External trigger: VC-278 board, CN1108 Pin (8)

- Playback Hi8/standard 8mm alignment tape for tracking. (WR5-1NP (NTSC), WR5-1CP (PAL))
- 9) Check that the oscilloscope RF waveform is normal at the entrance and exit. (Fig. 5-2-1.)

  If not normal, adjust according to the separate volume "8mm Video Mechanical Adjustment Manual M2000 Mechanism]".
- Perform "Processing after operations", after completing adjustment.

#### CN1108 of VC-278 board

Pin No.	Signal Name	Pin No.	Signal Name
1	REG GND	11	VCO
2	N. C.	12	EVF VG
3	BPF MONI	13	RF SWP
4	N. C.	14	N. C.
5	PB RF	15	CAP FG
6	REG GND	16	RF MON
7	N. C.	17	N. C.
8	RF SWP	18	REG GND
9	N. C.	19	REG GND
10	N. C.	20	REG GND

Table 5-2-1.

#### [Procedure after operations]

- Connect the adjustment remote commander, and turn on the HOLD switch.
- 2) Select page: 0, address: 01, and set data: 01.
- 3) Select page: 7, address: 62, and set data: 00.
- 4) Select page: C, address: 3E, set data: 00, and press the PAUSE button.
- 5) Select page: 0, address: 01, and set data: 00.
- 6) Remove the power supply from the unit.

#### 2-2. DIGITAL8 MODE

**Note:** Before performing the adjustments, check the data of page: 0, address: 10 is "00". If not, set data: 00 to this address.

## 2-2-1. HOW TO ENTER RECORD MODE WITHOUT CASSETTE

- 1) Connect the adjustment remote commander to the LANC jack.
- Turn the HOLD switch of the adjustment remote commander to the ON position.
- 3) Close the cassette compartment without the cassette.
- Select page: 3, address: 01, and set data: 0C, and press the PAUSE button of the adjustment remote commander. (The mechanism enters the record mode automatically.)
   Note: The function buttons becomes inoperable.
- 5) To quit the record mode, select page: 3, address: 01, set data: 00, and press the PAUSE button. (Whenever you want to quit the record mode, be sure to quit following this procedure.)

## 2-2-2. HOW TO ENTER PLAYBACK MODE WITHOUT CASSETTE

- 1) Connect the adjustment remote commander to the LANC jack.
- Turn the HOLD switch of the adjustment remote commander to the ON position.
- 3) Close the cassette compartment without the cassette.
- Select page: 3, address: 01, and set data: 0B, and press the PAUSE button.
  - (The mechanism enters the playback mode automatically.) **Note:** The function buttons becomes inoperable.
- 5) To quit the playback mode, select page: 3, address: 01, set data: 00, and press the PAUSE button. (Whenever you want to quit the playback mode, be sure to quit following this procedure.)

#### 2-2-3. OVERALL TAPE PATH CHECK

#### 1. Recording of the tape path check signal

- Clean the tape running side (tape guide, capstan shaft, pinch roller).
- 2) Connect the adjustment remote commander to the LANC jack.
- Turn the HOLD switch of the adjustment remote commander to the ON position.
- 4) Set to the camera recording mode.
- Select page: 3, address: 1C, set data: 5D, and press the PAUSE button of the adjustment remote commander.
- 6) Record for several minutes.
- 7) Release the camera recording mode.
- 8) Select page: 3, address: 1C, set data: 00, and press the PAUSE button.

#### 2. Tape path check

- Clean the tape running side (tape guide, capstan shaft, pinch roller).
- 2) Connect the adjustment remote commander to the LANC jack.
- Turn the HOLD switch of the adjustment remote commander to the ON position.
- Connect an oscilloscope to VC-278 board CN1108 via the CPC-13 jig (J-6082-443-A).

Channel 1: VC-278 board, CN1108 Pin (18) (Note) External trigger: VC-278 board, CN1108 Pin (19)

**Note:** Connect a 75 $\Omega$  resistor between Pins (6) of CN1108 and (6) (GND).

- 5) Select page: 7, address: 62, and set data: 01.
- 6) Playback the tape path check signal.
- 7) Select page: 3, address: 26, and set data: 31.
- 8) Select page: 3, address: 33, and set data: 08.
- Check that the oscilloscope RF waveform is flat at the entrance and exit.

If not flat, perform "2-1-2. TAPE PATH ADJUSTMENT" of "2-1. HI8/STANDARD 8mm MODE".

- 10) Select page: 3, address: 26, and set data: 00.
- 11) Select page: 3, address: 33, and set data: 00.
- 12) Select page: 7, address: 62, and set data: 00.

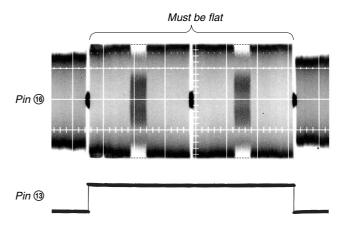


Fig. 5-2-2.

#### 5-3. VIDEO SECTION ADJUSTMENT

#### 3-1. PREPARATIONS BEFORE ADJUSTMENTS

Use the following measuring instruments for video section adjustments.

#### 3-1-1. Equipment to Required

- 1) TV monitor
- Oscilloscope (dual-phenomenon, band width above 30 MHz with delay mode) (Unless specified otherwise, use a 10:1 probe.)
- 3) Frequency counter
- 4) Pattern generator with video output terminal
- 5) Digital voltmeter
- 6) Audio generator
- 7) Audio level meter
- 8) Audio distortion meter
- 9) Audio attenuator
- 10) Regulated power supply
- 11) Digital8 alignment tapes
  - SW/OL standard (WR5-2D)
  - Parts code: 8-967-993-22
  - Audio operation check for NTSC (WR5-3ND)

Parts code: 8-967-993-32

• System operation check for NTSC (WR5-5ND)

Parts code: 8-967-993-42

• Audio operation check for PAL (WR5-3CD)

Parts code: 8-967-993-37

• System operation check for PAL (WR5-5CD)

Parts code: 8-967-993-47

- 12) NTSC Hi8/standard8 alignment tapes (For NTSC model)
  - For tracking adjustment (WR5-1NP)

Parts code: 8-967-995-02

• For video frequency characteristics adjustment (WR5-7NE)

Parts code: 8-967-995-13

• For checking Standard 8 mode operations

For LP (WR5-4NL)
Parts code: 8-967-995-51
For SP (WR5-5NSP)
Parts code: 8-967-995-42

Note: The following alignment tapes can also be used.

WR5-4NSP (8-967-995-41)

• For checking Hi8 mode operations

For LP (WR5-8NLE) Parts code : 8-967-995-52 For SP (WR5-8NSE) Parts code : 8-967-995-43

• For Checking AFM stereo operations (WR5-9NS)

Parts code: 8-967-995-23
• For BPF adjustment (WR5-11NS)
Parts code: 8-967-995-71

13) PAL Hi8/standard8 alignment tapes (For PAL model)

• For tracking adjustment (WR5-1CP)

Parts code: 8-967-995-07

• For video frequency characteristics adjustment (WR5-7CE)

Parts code: 8-967-995-18

• For checking Standard 8 mode operations

For LP (WR5-4CL) Parts code : 8-967-995-56 For SP (WR5-5CSP) Parts code : 8-967-995-47

Note: The following alignment tapes can also be used.

1) WR5-3CL (8-967-995-36) 2) WR5-4CSP (8-967-995-46)

• For checking Hi8 mode operations

For LP (WR5-8CLE) Parts code : 8-967-995-57 For SP (WR5-8CSE) Parts code : 8-967-995-48

• For Checking AFM stereo operations (WR5-9CS)

Parts code: 8-967-995-28
• For BPF adjustment (WR5-11CS)
Parts code: 8-967-995-76

- 14) Adjustment remote commander (J-6082-053-B)
- 15) CPC-13 jig (J-6082-443-A)

#### 3-1-2. Precautions on Adjusting

**Note1:** Before performing the adjustments, check the data of page: 0, address: 10 is "00". If not, set data: 00 to this address.

 The adjustments of this unit are performed in the VTR mode or camera mode.

To set to the VTR mode, set the power switch to "VCR or PLAYER" or set the "Forced VTR Power ON mode" using the adjustment remote commander (Note2).

To set to the Camera mode, set the power switch to "CAMERA" or set the "Forced Camera Power ON mode" using the adjustment remote commander (Note3).

After completing adjustments, be sure to exit the "Forced VTR Power ON Mode" or "Forced Camera Power ON Mode". (Note4)

2) The front panel block (SI-032 board (Microphone amp., remote commander receiver), FP-411 flexible (MIC jack, Head phone jack, LANC jack, MF photo sensor)) must be assembled for connecting the adjusting remote commander.

To remove it, disconnect the following connector.

VC-278 board CN1116 (30P 0.5mm)

3) As removing the cabinet (R) assembly (removing CN1110 of the VC-278 board) means removing the lithium 3V power supply (BT001 on the CF-2500 block), data such as date, time, user-set menus will be lost. After completing adjustments, reset these data.

But the self-diagnosis data and the data on history of use (total drum rotation time etc.) will be kept even if the lithium 3V power supply is removed. (Refer to "5-4.Service Mode" for the self-diagnosis data and the data on history of use.)

- 4) The cabinet (R) assembly (CF-2500 block, LCD bock) need not be connected to operate the VTR block. (Use the adjustment remote commander, to operate the VTR block.) When removing the cabinet (R) assembly, disconnect the following connector.
  - 1. VC-278 board CN1110 (22P, 0.5mm)
  - 2. VC-278 board CN1106 (20P, 0.8mm)
- 5) The memory stick connector is need not be connected. To remove it, disconnect the following connector.

VC-278 board CN1105 (10P, 0.5mm)

 The viewfinder block is need not be connected. To remove it, disconnect the following connector.

VC-278 board CN7001 (20P, 0.5mm)

- The lens block (CD-358 board) need not be connected. To remove, disconnect the following connectors.
  - 1. VC-278 board CN1501 (24P, 0.5mm)
  - 2. VC-278 board CN1551 (24P, 0.5mm)
- 8) By setting the "Forced VTR Power ON mode" or "Forced Camera Power ON mode", the video section can be operate even if the cabinet (L) assembly (SS-1380 block) has been removed. When removing the cabinet (L) assembly, disconnect the following connector.
  - 1. VC-278 board CN1109 (12P 0.8mm)

**Note2:** Setting the "Forced VTR Power ON" mode (VTR mode)

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: D, address: 10, set data: 02, and press the PAUSE button

The above procedure will enable the VTR power to be turned on with the cabinet (L) assembly (SS-1380 block) removed.

After completing adjustments, be sure to exit the "Forced VTR Power ON mode".

**Note3:** Setting the "Forced Camera Power ON" mode (Camera mode)

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: D, address: 10, set data: 01, and press the PAUSE button.

The above procedure will enable the camera power to be turned on with the cabinet (L) assembly (SS-1380 block) removed

After completing adjustments, be sure to exit the "Forced Camera Power ON mode".

Note4: Exiting the "Forced Power ON" mode

- 1) Select page: 0, address: 01, and set data: 01.
- Select page: D, address: 10, set data: 00, and press the PAUSE button.
- 3) Select page: 0, address: 01, and set data: 00.

#### 3-1-3. Adjusting Connectors

Some of the adjusting points of the video section are concentrated at VC-278 board CN1108. Connect the measuring instruments via the CPC-13 jig (J-6082-443-A). The following table lists the pin numbers and signal names of CN1108.

Pin No.	Signal Name	Pin No.	Signal Name
1	REG GND	11	VCO
2	N. C.	12	EVF VG
3	BPF MONI	13	RF SWP
4	N. C.	14	N. C.
5	PB RF	15	CAP FG
6	REG GND	16	RF MON
7	N. C.	17	N. C.
8	RF SWP	18	REG GND
9	N. C.	19	REG GND
10	N. C.	20	REG GND

Table 5-3-1.

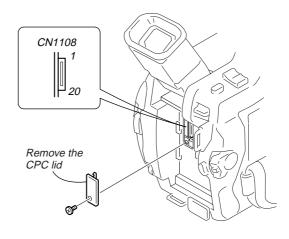


Fig. 5-3-1.

## 3-1-4. Connecting the Equipment

Connect the measuring instruments as shown in Fig. 5-3-2 and perform the adjustments.

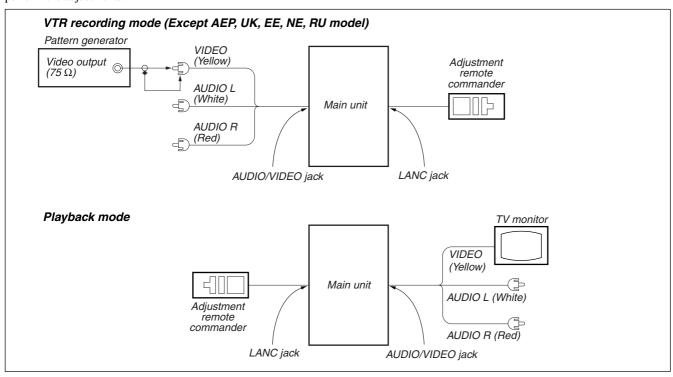


Fig. 5-3-2.

• Abbreviation

EE : East European model
NE : North European model
RU : Russian model

## 3-1-5. Alignment Tape

The following table lists alignment tapes which are available. Use the tape specified in the signal column for each adjustment. If the type of tape to be used for checking operations is not specified, use whichever type.

## Digital8 alignment tape

Name	Usage
SW/OL standard (WR5-2D)	Switching position adjustment
Audio operation check	Audio system adjustment
(WR5-3ND (NTSC),	
WR5-3CD (PAL))	
System operation check	Operation check
(WR5-5ND (NTSC),	
WR5-5CD (PAL))	

## Hi8/standard 8 mm alignment tape

Name	Recording mode	Tape type	Tape speed	Usage
Tracking (WR5-1NP(NTSC), WR5-1CP(PAL))	Standard 8	MP	SP	Tape path adjustment, Switching position adjustment
Video frequency characteristics (WR5-7NE(NTSC), WR5-7CE(PAL))	Hi8	ME	SP(NTSC) LP(PAL)	Frequency characteristics adjustment
Operation check (WR5-5NSP(NTSC), WR5-5CSP(PAL))	Standard 8	MP	SP	
Operation check (WR5-8NSE(NTSC), WR5-8CSE(PAL))	Hi8	ME	SP	Operation check
Operation check (WR5-4NL(NTSC), WR5-4CL(PAL))	Standard 8	MP	LP	Operation check
Operation check (WR5-8NLE(NTSC), WR5-8CLE(PAL)	Hi8	ME	LP	
AFM stereo operation check WR5-9NS(NTSC), WR5-9CS(PAL) Standard 8		MP	SP	AFM stereo Operation check
BPF adjustment WR5-11NS(NTSC), WR5-11CS(PAL)	Standard 8	MP	SP	BPF adjustment

Tape type

ME ...... Particle type metal tape MP ...... Evaporated type metal tape

Table. 5-3-2.

Fig. 5-3-3. Shows the color bar signals recorded on the alignment tape.

Note: Measure using the video terminal of AUDIO/VIDEO jack (Terminated at 75  $\Omega$ ).

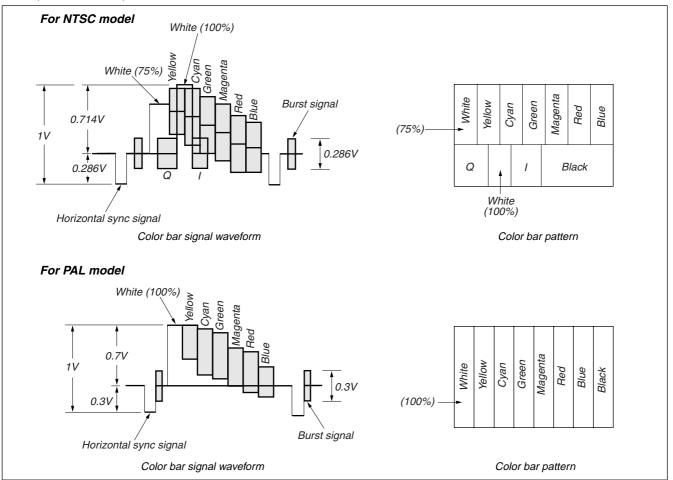


Fig. 5-3-3. Color Bar Signal of the Alignment Tape

#### 3-1-6. Input/output Level and Impedance

Video input/output

Special stereo minijack, 1Vp-p,  $75\Omega$ , unbalanced, sync negative

S video input/output

4-pin mini DIN

Luminance signal:

1Vp-p, 75Ω, unbalanced, sync negative

Chrominance signal:

 $0.286 Vp\text{-}p, 75\Omega, unbalanced (NTSC)$ 

0.300Vp-p,  $75\Omega$ , unbalanced (PAL)

Audio input/output

Special stereo minijack:

Input: -7.5dBs, input impedance more than  $47k\Omega$ 

Output: -7.5dBs, (at load impedance  $47k\Omega$ ), output impedance less than  $2.2k\Omega$ 

#### 3-2. SYSTEM CONTROL SYSTEM ADJUSTMENT

#### Initialization of 8, A, B, C, D, E, F, 1B, 1C, 1E, 1F Page Data

If the 8, A, B, C, D, E, F, 1B, 1C, 1E, 1F page data is erased due to some reason, perform "1-2. INITIALIZATION OF PAGE DATA" of "5-1. CAMERA SECTION ADJUSTMENT"

Note: When reading or writing the 1B, 1C, 1E, 1F page data, select page: 0, address: 10, and set data: 01, then select B, C, E or F page. The 1B, 1C, 1E or 1F page can be chosen by this data setting.

After reading or writing, reset the data of page: 0, address: 10 to "00".

#### 2. Serial No. Input

**Note:** Before performing the adjustments, check the data of page: 0, address: 10 is "00". If not, set data: 00 to this address.

#### 2-1. Company ID Input

Write the company ID in the EEPROM (nonvolatile memory).

Page	8
Address	8C, 8D, 8E, 8F, 90

#### Input method:

- 1) Select page: 0, address: 01, and set data: 01.
- Input the following data to page: 8, addresses: 8C to 90.
   Note: Press the PAUSE button of the adjustment remote commander each time to set the data.
- 3) Select page: 0, address: 01, and set data: 00.

Address	Data
8C	08
8D	00
8E	46
8F	01
90	02

#### 2-2. Serial No. Input

Write the serial No. and model code in the EEPROM (nonvolatile memory). Convert the serial No. on the name plate from decimal to hexadecimal, and write in the EEPROM.

Page	8
Address	91, 92, 93

#### Input method:

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Read the serial No. on the name plate, and take it as D<sub>1</sub>.

Example: If the serial No. is 77881.

 $D_1 = 77881$ 

**Note:** Use six digits of the low rank when a serial No. is more than seven digits.

3) Obtain D<sub>2</sub> and H<sub>1</sub> corresponding to D<sub>1</sub> from Table 5-3-3.

Example: If D1 is "77881".

D2=D1-65536=12345

H<sub>1</sub>=FE

D <sub>1</sub> (Decimal)	D <sub>2</sub> (Decimal)	H <sub>1</sub> (Hexadecimal) (Service model code)
000001 to 065535	D <sub>1</sub>	FE
065536 to 131071	D1-65536	FE
131072 to 196607	D1-131072	FE

Table 5-3-3.

4) Input H1 to page: 8, address: 91. (Model code input)

Example: If H1 is "FE".

Select page: 8, address: 91, set data: FE, and press the PAUSE button.

 Obtain the maximum decimal not exceeding D<sub>2</sub> from Table 5-3-4, and take this as D<sub>3</sub>.

Example: If D2 is "12345".

 $D_3 = 12288$ 

 Obtain the hexadecimal corresponding to D<sub>3</sub> from Table 5-3-4, and take this as H<sub>3</sub>.

Example: If D<sub>3</sub> is "12288".

 $H_3 = 3000$ 

7) Obtain the difference  $D_4$  between  $D_2$  and  $D_3$ . (Decimal calculation,  $0 \le D_4 \le 255$ )

 $D_4 = D_2 - D_3$ 

Examp le: If D2 is "12345" and D3 is "12288".

 $D_4 = 12345 - 12288 = 57$ 

8) Convert D4 to hexadecimal, and take this as H4.

(Refer to "Hexadecimal-decimal conversion table" in "5-4. Service Mode".)

Example: If D4 is "57".

 $H_4 = 39$ 

9) Input the upper 2 digits of H<sub>3</sub> to page: 8, address: 92.

Example: If H<sub>3</sub> is "3000".

Select page: 8, address: 92, set data: 30, and press the PAUSE button.

10) Input H4 to page: 8, address: 93.

Example: If H<sub>4</sub> is "39".

Select page: 8, address: 93, set data: 39, and press the PAUSE button.

11) Select page: 0, address: 01, and set data: 00.

Decimal (D <sub>3</sub> )	Hexa- decimal (H <sub>3</sub> )	Decimal (D <sub>3</sub> )	Hexa- decimal (H <sub>3</sub> )	Decimal (D <sub>3</sub> )	Hexa- decimal (H <sub>3</sub> )	Decimal (D <sub>3</sub> )	Hexa- decimal (H <sub>3</sub> )	Decimal (D <sub>3</sub> )	Hexa- decimal (H <sub>3</sub> )	Decimal (D <sub>3</sub> )	Hexa- decimal (H <sub>3</sub> )	Decimal (D <sub>3</sub> )	Hexa- decimal (H <sub>3</sub> )	Decimal (D <sub>3</sub> )	Hexa- decimal (H <sub>3</sub> )
0	0000	8192	2000	16384	4000	24576	6000	32768	8000	40960	A000	49152	C000	57344	E000
256	0100	8448	2100	16640	4100	24832	6100	33024	8100	41216	A100	49408	C100	57600	E100
512	0200	8704	2200	16896	4200	25088	6200	33280	8200	41472	A200	49664	C200	57856	E200
768	0300	8960	2300	17152	4300	25344	6300	33536	8300	41728	A300	49920	C300	58112	E300
1024	0400	9216	2400	17408	4400	25600	6400	33792	8400	41984	A400	50176	C400	58368	E400
1280	0500	9472	2500	17664	4500	25856	6500	34048	8500	42240	A500	50432	C500	58624	E500
1536	0600	9728	2600	17920	4600	26112	6600	34304	8600	42496	A600	50688	C600	58880	E600
1792	0700	9984	2700	18176	4700	26368	6700	34560	8700	42752	A700	50944	C700	59136	E700
2048	0800	10240	2800	18432	4800	26624	6800	34816	8800	43008	A800	51200	C800	59392	E800
2304	0900	10496	2900	18688	4900	26880	6900	35072	8900	43264	A900	51456	C900	59648	E900
2560	0A00	10752	2A00	18944	4A00	27136	6A00	35328	8A00	43520	AA00	51712	CA00	59904	EA00
2816	0B00	11008	2B00	19200	4B00	27392	6B00	35584	8B00	43776	AB00	51968	CB00	60160	EB00
3072	0C00	11264	2C00	19456	4C00	27648	6C00	35840	8C00	44032	AC00	52224	CC00	60416	EC00
3328	0D00	11520	2D00	19712	4D00	27904	6D00	36096	8D00	44288	AD00	52480	CD00	60672	ED00
3584	0E00	11776	2E00	19968	4E00	28160	6E00	36352	8E00	44544	AE00	52736	CE00	60928	EE00
3840	0F00	12032	2F00	20224	4F00	28416	6F00	36608	8F00	44800	AF00	52992	CF00	61184	EF00
4096	1000	12288	3000	20480	5000	28672	7000	36864	9000	45056	B000	53248	D000	61440	F000
4352	1100	12544	3100	20736	5100	28928	7100	37120	9100	45312	B100	53504	D100	61696	F100
4608	1200	12800	3200	20992	5200	29184	7200	37376	9200	45568	B200	53760	D200	61952	F200
4864	1300	13056	3300	21248	5300	29440	7300	37632	9300	45824	B300	54016	D300	62208	F300
5120	1400	13312	3400	21504	5400	29696	7400	37888	9400	46080	B400	54272	D400	62464	F400
5376	1500	13568	3500	21760	5500	29952	7500	38144	9500	46336	B500	54528	D500	62720	F500
5632	1600	13824	3600	22016	5600	30208	7600	38400	9600	46592	B600	54784	D600	62976	F600
5888	1700	14080	3700	22272	5700	30464	7700	38656	9700	46848	B700	55040	D700	63232	F700
6144	1800	14336	3800	22528	5800	30720	7800	38912	9800	47104	B800	55296	D800	63488	F800
6400	1900	14592	3900	22784	5900	30976	7900	39168	9900	47360	B900	55552	D900	63744	F900
6656	1A00	14848	3A00	23040	5A00	31232	7A00	39424	9A00	47616	BA00	55808	DA00	64000	FA00
6912	1B00	15104	3B00	23296	5B00	31488	7B00	39680	9B00	47872	BB00	56064	DB00	64256	FB00
7168	1C00	15360	3C00	23552	5C00	31744	7C00	39936	9C00	48128	BC00	56320	DC00	64512	FC00
7424	1D00	15616	3D00	23808	5D00	32000	7D00	40192	9D00	48384	BD00	56576	DD00	64768	FD00
7680	1E00	15872	3E00	24064	5E00	32256	7E00	40448	9E00	48640	BE00	56832	DE00	65024	FE00
7936	1F00	16128	3F00	24320	5F00	32512	7F00	40704	9F00	48896	BF00	57088	DF00	65280	FF00

Table 5-3-4.

#### 3-3. SERVO AND RF SYSTEM ADJUSTMENT

Before perform the servo and RF system adjustments, check that the specified value of "54MHz/66MHz Origin Oscillation Adjustment" of "VIDEO SYSTEM ADJUSTMENT" is satisfied. And check that the data of page: 0, address: 10 is "00". If not, set data: 00 to this address.

Note: NTSC model: DCR-TRV740/TRV840 PAL model: DCR-TRV738E/TRV740E

#### **Adjusting Procedure:**

- 1. REEL FG adjustment
- 2. PLL fo & LPF fo adjustment
- 3. Switching position adjustment
- AGC center level and APC & AEQ adjustment
- PLL fo & LPF fo fine adjustment
- Hi8/Standrd8 switching position adjustment
- 7. Cap FG duty adjustment

### 1. REEL FG Adjustment (VC-278 board) RadarW



Compensates the dispersion of the hall elements.

Measurement Point	Display data of page: 3, address: 03		
Measuring Instrument	Adjustment remote commander		
Adjustment Page	С		
Adjustment Address	17, 2F		
Specified Value	00 or 01 or 04 or 05		

Note: The data of page: 0, address: 10 must be "00".

#### Adjusting method:

Order	Page	Address	Data	Procedure
1				Close the cassette compartment without inserting a cassette.
2	0	01	01	Set the data.
3	3	01	1C	Set the data, and press PAUSE button.
4	3	02		Check that the data changes to "00",
5	3	03		Check that the data is "00" or "01" or "04" or "05". (Note)
6	0	01	00	Set the data.

**Note:** If the data is other value, adjustment has errors. (Take an appropriate remedial measures according to the errors referring to the following table.)

Data	Contents of defect
02, 03, 06, 07	T reel is defective
08, 09, 0C, 0D	S reel is defective
0A, 0B, 0E, 0F	S reel and T reel are defective

#### 2. PLL fo & LPF fo Adjustment (VC-278 board) RadarW



Mode	VTR stop
Measurement Point	Display data of page: 3, address: 02, 03
Measuring Instrument	Adjustment remote commander
Adjustment Page	С
Adjustment Address	1F, 20, 22, 29
Specified Value	Data of page: 3, address: 02 is "00". Data of page: 3, address: 03 is "00".

Note1: The data of page: 0, address: 10 must be "00".

#### Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	С	21	CA	Set the data, and press PAUSE button.
3	3	01	00	Set the data, and press PAUSE button.
4	3	01	30	Set the data, and press PAUSE button.
5	3	02		Check that the data changes to "00" with in 10 sec. (Note2)
6	3	03		Check that the data is "00". (Note2)
7	0	01	00	Set the data.

Note2: If it isn't satisfied, select page: C, address: 21, set the following data, and press the PAUSE button, and repeat steps 3 to 6.

	Setting data
When the data of page: C, address: 21 is "CA".	CE
When the data of page: C, address: 21 is "CE".	C6
When the data of page: C, address: 21 is "C6".	D2
When the data of page: C, address: 21 is "D2"	C2

There are errors when it isn't satisfied even if the above treatment is done.

If bit2, bit3, bit4, bit5 or bit 6 of the data of page: 3, address: 03 is "1", there are errors. For the error contents, see the following table. (For the bit values, refer to "5-4. SERVICE MODE", "4-3. 3. Bit value discrimination".)

Bit value of page: 3, address: 03 data	Error contents
bit $2 = 1$ or bit $3 = 1$	PLL fo fine adjustment is defective
bit $4 = 1$ or bit $5 = 1$	PLL fo adjustment is defective
bit 6 = 1	LPF fo adjustment is defective

#### 3. Switching Position Adjustment (VC-278 board) RadarW

To obtain normal playback waveform output during the Digital8 playback mode, adjust the switching position.

Mode	VTR playback
Signal	SW/OL reference tape (WR5-2D)
Measurement Point	Display data of page: 3, address: 03
Measuring Instrument	Adjustment remote commander
Adjustment Page	С
Adjustment Address	10, 11, 12, 13
Specified Value	00

**Note1:** The data of page: 0, address: 10 must be "00".

#### Adjusting method:

Order	Page	Address	Data	Procedure
1				Insert the SW/OL reference tape and enter the VTR STOP mode.
2	0	01	01	Set the data.
3	С	10	EE	Set the data, and press PAUSE button.
4	3	21		Check that the data is "02". (Note2)
5	3	01	0D	Set the data, and press PAUSE button.
6	3	02		Check that the data changes to "00" in the following order. "0E"—"29"—"20"—"20"—"00"
7	3	03		Check that the data is "00". (Note3)
8	С	10		Check that the data is other than "EE". (Note3)
9	0	01	00	Set the data.

**Note2:** If the data of page: 3, address: 21 is "72", the tape top being played. After playing the tape for 1 to 2 seconds, stop it, perform step 5 and higher.

Note3: If the data is other than "00", select page: C, address: 21, after write down the data, set data: 10, and press the PAUSE button, and repeat from step1.

There are errors when the data of page: 3, address: 03 is other than "00" even if this treatment is done. Select page: C, address: 21, set the data written down, and press the PAUSE button.

If bit 0 of the data is "1", the A channel is defective. If bit 1 is "1", the B channel is defective. Contents of the defect is written into page: C, addresses: 10 and 12. See the following table. (For the bit values, refer to "5-4. SERVICE MODE", "4-3. 3. Bit value discrimination". ) If bit 3 of the data is "1", the tape end being played, and adjustment has errors.

**Note4:** If the data is "EE", rewind the tape and repeat steps 1 to 7.

#### When the A channel is defective

When the A chainler is delective			
Data of page: C, address: 10	Contents of defect		
EE	Writing into EEPROM (IC4502) is defective		
E8	Adjustment data is out of range		
E7	No data is returned from IC3301		

#### When the B channel is defective

Data of page: C, address: 12	Contents of defect
E8	Adjustment data is out of range
E7	No data is returned from IC3301

#### 4. AGC Center Level and APC & AEQ Adjustment

**Note:** The data of page: 0, address: 10 must be "00". Use a Hi8 MP tape.

#### 4-1. Preparations before adjustments

Mode	Camera recording
Subject	Arbitrary

#### Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	8	21	C8	Set the data.
3				Record the camera signal for three minutes.

## 4-2. AGC Center Level Adjustment (VC-278 board)

Mode	Playback
Signal	Recorded signal at "Preparations before adjustments"
Measurement Point	Pin (6) of CN1108 (RF MON) (Note 1) Ext. trigger: Pin (3) of CN1108 (RF SWP)
Measuring Instrument	Oscilloscope
Adjustment Page	С
Adjustment Address	1E
Specified Value	The data of page: 3, address: 03 is "00"

**Note1:** Connect a  $75\Omega$  resistor between Pin (6) and Pin (20) (GND) of CN1108.

75 $\Omega$  resistor (Parts code: 1-247-804-11)

#### Adjusting method:

Order	Page	Address	Data	Procedure
1				Playback the recorded signal at "Preparations before adjustments"
2	0	01	01	Set the data.
3	7	62	01	Set the data.
4	3	33	08	Set the data.
5				Confirm that the playback RF signal is stable. (Fig. 5-3-4.)
6	3	01	23	Set the data, and press PAUSE button.
7	3	02		Check that the data is "00".
8	3	03		Check that the data is "00". (Note2)
9				Perform "APC & AEQ Adjustment".

Note2: If the data of page: 3, address: 03 is other than "00", adjustment has errors.

## 4-3. APC & AEQ Adjustment (VC-278 board) RadarW

Mode	Playback
Signal	Recorded signal at "Preparations before adjustments"
Measurement Point	Pin (6) of CN1108 (RF MON) (Note 1) Ext. trigger: Pin (3) of CN1108 (RF SWP)
Measuring Instrument	Oscilloscope
Adjustment Page	С
Adjustment Address	18, 19, 1B, 1C, 21, 2C
Specified Value	The data of page: 3, address: 03 is "00"

**Note1:** Connect a 75 $\Omega$  resistor between Pin (6) and Pin (20) (GND) of CN1108

75 $\Omega$  resistor (Parts code: 1-247-804-11)

**Note2:** The "AGC Center Level Adjustment" must have already been completed before starting this adjustment.

## Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	С	18	20	Set the data, and press PAUSE button.
3	С	19	20	Set the data, and press PAUSE button.
4	С	1B	25	Set the data, and press PAUSE button.
5	С	1C	25	Set the data, and press PAUSE button.
6	С	21	CA	Set the data, and press PAUSE button.
7	С	2C	03	Set the data, and press PAUSE button.
8				Playback the recorded signal at "Preparations before adjustments"
9	7	62	01	Set the data.
10	3	33	08	Set the data.
11				Confirm that the playback RF signal is stable. (Fig. 5-3-4.)
12	3	01	07	Set the data, and press PAUSE button.
13	3	02		Check that the data changes from "07" to "00" in about 20 seconds after pressing PAUSE button.
14	3	03		Check that the data is "00". (Note3)
15				Perform "Processing after Completing Adjustments".

**Note3:** If the data is other than "00", adjustment has errors.

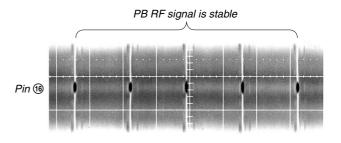
## 4-4. Processing after Completing Adjustments RadarW

00

01

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	7	62	00	Set the data.
3	3	33	00	Set the data.
4	8	21	00	Set the data, and press PAUSE button.

Set the data.



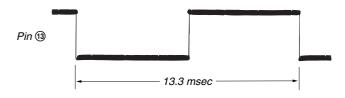


Fig. 5-3-4.

## 5. PLL fo & LPF fo Fine Adjustment (VC-278 board)

Mode	VTR stop
Signal	Arbitrary
Measurement Point	Display data of page: 3, address: 02, 03
Measuring Instrument	Adjustment remote commander
Adjustment Page	С
Adjustment Address	1F, 20, 22, 29
Specified Value	Display data of page: 3, address: 02 is "00". Display data of page: 3, address: 03 is "00".

**Note1:** The data of page: 0, address: 10 must be "00".

#### Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	3	01	30	Set the data, and press PAUSE button.
3	3	02		Check that the data changes to "00" with in 10 sec. (Note2)
4	3	03		Check that the data is "00". (Note3)
5	0	01	00	Set the data.

**Note2:** If it isn't satisfied, there are errors.

**Note3:** If the data of page: 3, address: 03 is other than "00", there are errors. For the error contents, see the following table. (For the bit values, refer to "5-4. SERVICE MODE", "4-3. 3. Bit value discrimination".)

Bit value of page: 3, address: 03	Error contents
bit $2 = 1$ or bit $3 = 1$	PLL fo fine adjustment is defective
bit $4 = 1$ or bit $5 = 1$	PLL fo adjustment is defective
bit 6 = 1	LPF fo adjustment is defective

# 6. Hi8/Standard8 Switching Position Adjustment (VC-278 board)

If deviated in this case causes switching noise or jitter on the Hi8/Standard8 mode played back screen.

Mode	Playback
Signal	Hi8/Standard8 alignment tape: For tracking adjustment (WR5-1NP (NTSC), WR5-1CP (PAL))
Measurement Point	CH1: Pin <b>(8)</b> of CN1108 (RF SWP) CH2: Pin <b>(5)</b> of CN1108 (PB RF)
Measuring Instrument	Oscilloscope
Adjustment Page	С
Adjustment Address	40, 41
Specified Value	$t1 = 0 \pm 10 \mu sec$

**Note1:** The data of page: 0, address: 10 must be "00".

Order	Page	Address	Data	Procedure
1				Set to the stop mode.
2	0	01	01	Set the data.
3	С	3E	40	Set the data, and press PAUSE button.
4	7	62	02	Set the data.
5				Set to the playback mode.
6	С	40		Change the data and minimize "t1". (Coarse adjustment)
7	C	40		Press PAUSE button
8	С	41		Change the data and adjust so that the switching position (t1) becomes the specified value. (Fine adjustment)
9	C	41		Press PAUSE button
10	С	3E	00	Set the data, and press PAUSE button.
11	7	62	00	Set the data.
12	0	01	00	Set the data.

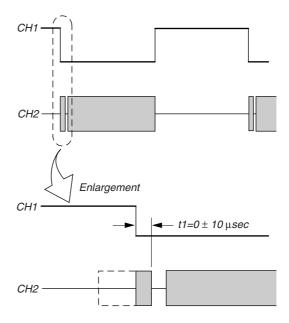


Fig. 5-3-5.

## 7. CAP FG Duty Adjustment (VC-278 board) RadarW

Set the Cap FG signal duty cycle to 50% to establish an appropriate capstan servo. If deviated, the uneven rotation of capstan and noise can occur in the Hi8/Standard8 LP mode.

Mode	Playback
Signal	Hi8/standard 8 alignment tape : For checking operation (WR5-5NSP (NTSC), WR5-5CSP (PAL))
Measurement Point	Pin (5) of CN1108 (CAP FG)
Measuring Instrument	Oscilloscope
Adjustment Page	С
Adjustment Address	16
Specified value	Duty = 50 ± 1 %

**Note1:** The data of page: 0, address: 10 must be "00".

#### Adjusting method:

Order	Page	Address	Data	Procedure
1				Set to the playback mode.
2	0	01	01	Set the data.
3	3	01	00	Set the data, and press PAUSE button.
4	3	01	81	Set the data, and press PAUSE button.
5	3	02		Check that the data changes from "81" to "00".
6	3	03		Check that the data is "00". (Note2)
7				Check that Duty of CAP FG signal satisfies the specified value. If not, repeat steps 3 to 7.
8	0	01	00	Set the data.

**Note2:** If the data of page: 3, address: 03 is other than "00", there are errors. For the error contents, see the following table. (For the bit values, refer to "5-4. SERVICE MODE", "4-3. 3. Bit value discrimination".)

Bit value of page: 3, address: 03	Error contents
bit 0 = 1	Adjustment time-out
bit 1 = 1	Hi8/Standard8 mode wasn't set up.

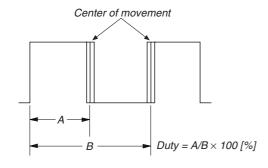


Fig. 5-3-6.

#### 3-4. VIDEO SYSTEM ADJUSTMENTS

Note1: Before performing the adjustments, check the data of page: 0,

address: 10 is "00". If not, set data: 00 to this address.

Note2: NTSC model: DCR-TRV740/TRV840

PAL model: DCR-TRV738E/TRV740E

# 1. 54MHz/66MHz Origin Oscillation Adjustment (VC-278 board)

Set the frequency of the clock for synchronization.

If deviated, the synchronization will be disrupted and the color will become inconsistent.

Mode	Camera	
Subject	Not required	
Measurement Point	Pin 16 of IC1502	
Measuring Instrument	Frequency counter	
Adjustment Page	F	
Adjustment Address	10	
Specified Value	f = 33000000 ± 166Hz (NTSC)	
	$f = 27000000 \pm 134$ Hz (APL)	

**Note:** The data of page: 0, address: 10 must be "00".

#### Adjusting method:

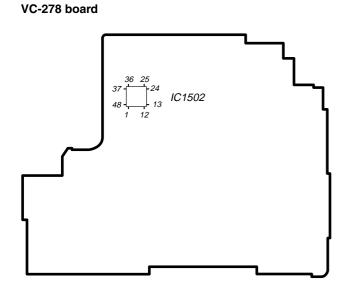
rujusting methou.						
Order	Page	Address	Data	Procedure		
1	0	01	01	Set the data.		
2	F	10		Change the data and set the frequency (f) to the specified value.		
3	F	10		Press PAUSE button.		
4	0	01	00	Set the data.		

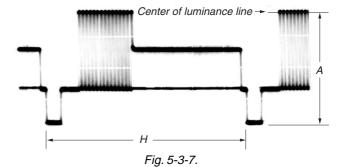
#### 2. S VIDEO OUT Y Level Adjustment (VC-278 board)

Mode	VTR stop
Signal	No signal
Measurement Point	Y signal terminal of S VIDEO jack (75 $\Omega$ terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	С
Adjustment Address	25
Specified Value	$A = 1000 \pm 20 \text{mV}$

**Note1:** The data of page: 0, address: 10 must be "00".

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	A	12	10	Set the data, and press PAUSE button.
3	3	0C	02	Set the data, and press PAUSE button.
4	С	25		Change the data and set the Y signal level (A) to the specified value.
5	С	25		Press PAUSE button.
6	3	0C	00	Set the data, and press PAUSE button.
7	A	12	00	Set the data, and press PAUSE button.
8	0	01	00	Set the data.





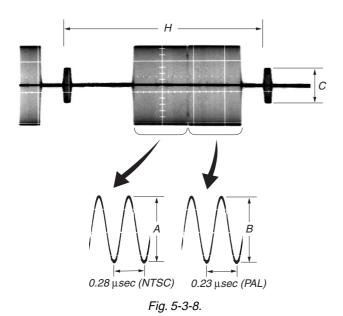
# 3. S VIDEO OUT Chroma Level Adjustment (VC-278 board)

Mode	VTR stop
Signal	No signal
Measurement Point	Chroma signal terminal of S VIDEO jack (75Ω terminated) External trigger: Y signal terminal of S VIDEO jack
Measuring Instrument	Oscilloscope
Adjustment Page	С
Adjustment Address	26, 27
Specified Value	$Cr level: A = 714 \pm 14 mV (NTSC)$ $A = 700 \pm 14 mV (PAL)$ $Cb level: B = 714 \pm 14 mV (NTSC)$ $B = 700 \pm 14 mV (PAL)$ $Burst level: C = 286 \pm 6 mV (NTSC)$ $C = 300 \pm 6 mV (PAL)$

**Note:** The data of page: 0, address: 10 must be "00".

#### Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	A	12	10	Set the data, and press PAUSE button.
3	3	0C	02	Set the data, and press PAUSE button.
4	C	26		Change the data and set the Cr signal level (A) to the specified value.
5	C	26		Press PAUSE button.
6	С	27		Change the data and set the Cb signal level (B) to the specified value.
7	C	27		Press PAUSE button.
8	3	0C	00	Set the data, and press PAUSE button.
9	A	12	00	Set the data, and press PAUSE button.
10	0	01	00	Set the data.



## 4. VIDEO OUT Y, Chroma Level Check (VC-278 board)

Mode	VTR stop
Signal	No signal
Measurement Point	Video signal terminal of AUDIO/ VIDEO jack (75Ω terminated)
Measuring Instrument	Oscilloscope
Specified Value	Sync level: $A = 293 \pm 18$ mV (NTSC) $A = 307 \pm 18$ mV (PAL) Burst level: $B = 286 \pm 18$ mV (NTSC) $B = 300 \pm 18$ mV (PAL)

**Note:** The data of page: 0, address: 10 must be "00".

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	A	12	10	Set the data, and press PAUSE button.
3	3	0C	02	Set the data, and press PAUSE button.
4				Check that the sync signal level (A) satisfies the specified value.
5				Check that the burst signal level (B) satisfies the specified value.
6	3	0C	00	Set the data, and press PAUSE button.
7	A	12	00	Set the data, and press PAUSE button.
8	0	01	00	Set the data.

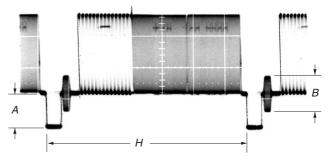


Fig. 5-3-9.

# 5. Hi8/Standard8 Y/C Output Level Setting (VC-278 board)

Set the Y/C signal output level during the Hi8/Standard8 playback mode.

	Mode	VTR stop
	Signal	No signal
Ī	Adjustment Page	С
ſ	Adjustment Address	44, 45

**Note1:** Perform this adjustment when IC2201 is replaced. **Note2:** The data of page: 0, address: 10 must be "00".

#### Adjusting method:

Aujusting method.						
Order	Page	Address	Data	Procedure		
1	0	01	01	Set the data.		
2	D	10	02	Set the data, and press PAUSE button.		
3	3	9E	01	Set the data.		
4	3	A4		Check that the data. When the data is "53", proceed to step 5. When the data is "03", proceed to step 8.		
5	С	44	<69> [65]	Set the data, and press PAUSE [65]button. (Note3)		
6	С	45	<64> [72]	Set the data, and press PAUSE button. (Note3)		
7				Proceed to step 10.		
8	С	44	A0	Set the data, and press PAUSE button.		
9	С	45	<aa> [B8]</aa>	Set the data, and press PAUSE button. (Note3)		
10	3	9E	00	Set the data.		
11	D	10	00	Set the data, and press PAUSE button.		
12	0	01	00	Set the data.		

Note3: <>: NTSC model, []: PAL model

# 6. Hi8/standard 8mm AFC fo Adjustment (VC-278 board)

Adjust the pull-in range of the clock generator (IC2201) for A/D conversion during Hi8/standard 8mm playback.

Mode	VTR stop
Signal	No signal
Measurement Point	Display data of page: 3, address: 9D
Measuring Instrument	Adjustment remote commander
Adjustment Page	С
Adjustment Address	43
Specified Value	7C to 84

**Note:** The data of page: 0, address: 10 must be "00".

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	D	10	02	Set the data, and press PAUSE button.
3	3	0D	04	Set the data, and press PAUSE button.
4	3	93	04	Set the data.
5	3	9E	01	Set the data.
6	С	43	50	Set the data, and press PAUSE button.
7	3	01	60	Set the data, and press PAUSE button.
8	3	02		Check that the data changes from "60" to "00".
9	3	03		Check that the data is "00".
10	3	01	00	Set the data, and press PAUSE button.
11	3	9D		Check that the data satisfies the specifies value. When the data doesn't satisfy the specified value, return to step 6.
12	3	0D	00	Set the data, and press PAUSE button.
13	3	93	00	Set the data.
14	3	9E	00	Set the data.
15	D	10	00	Set the data, and press PAUSE button.
16	0	01	00	Set the data.

#### 3-5. AUDIO SYSTEM ADJUSTMENTS

**Note1:** Before performing the adjustments, check the data of page: 0,

address: 10 is "00". If not, set data: 00 to this address. **Note2:** NTSC model: DCR-TRV740/TRV840

PAL model: DCR-TRV738E/TRV740E

#### [Connecting the measuring instruments for the audio]

Connect the audio system measuring instruments in addition to the video system measuring instruments as shown in Fig. 5-3-10.

#### [Adjustment Procedure]

- 1) Hi8/Standard8 AFM BPF fo adjustment
- 2) Hi8/Standard8 AFM 1.5MHz deviation adjustment
- 3) Hi8/Standard8 AFM 1.7MHz deviation adjustment
- 4) Digital8 playback level check
- 5) Overall level characteristics check
- 6) Overall distortion check
- 7) Overall noise level check
- 8) Overall separation check

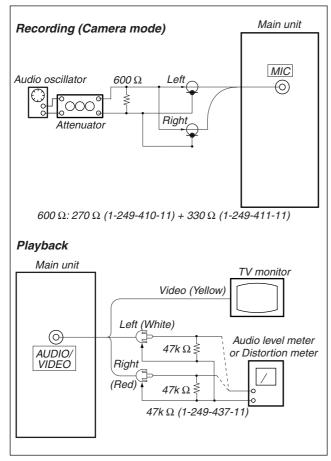


Fig. 5-3-10.

#### Hi8/Standard8 AFM BPF fo Adjustment (VC-278 board)

Sets the BPF passing frequency of IC5701 so that the AFM signal can separate from the playback RF signal properly. If deviated, the mono/stereo mode will be differentiated incorrectly, and noises and distortions will increase during high volume playback.

Mode	Playback
Signal	Hi8/Standard8 alignment tape: For BPF adjustment (WR5-11NS (NTSC), WR5-11CS (PAL))
Measurement Point	AUDIO/VIDEO jack left or right
Measuring Instrument	Distortion meter
Adjustment Page	С
Adjustment Address	4E
Specified Value	The Main and Sub channel distortion rate should be almost the same (within $\pm$ 1%) and minimum.

**Note:** The data of page: 0, address: 10 must be "00".

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Set the Hi-Fi SOUND switch (menu display) to "2".
- Select page: C, address: 4E, change the data and minimize the distortion rate.
- 4) Press the PAUSE button.
- 5) Set the Hi-Fi SOUND switch (menu display) to "1".
- Select page: C, address: 4E, change the data and minimize the distortion rate.
- 7) Press the PAUSE button.
- 8) Repeat steps 2) to 7) and set the data of address: 4E so that the distortions rates when the Hi-Fi SOUND switch is set to "2" and set to "1" respectively are almost the same and minimum.
- 9) Press the PAUSE button.
- 10) Select page: 0, address: 01, and set data: 00.
- 11) Set the Hi-Fi SOUND switch to "STEREO".

## 2. Hi8/Standard8 AFM 1.5 MHz Deviation Adjustment (VC-278 board)

Adjust to the optimum 1.5MHz audio FM signal deviation. If the adjustment is not correct, its playback level will differ from that of other units.

Mode	Playback
Signal	Hi8/Standard8 alignment tape: For checking AFM stereo operation Monoscope section (WR5-9NS (NTSC), WR5-9CS (PAL))
Measurement Point	AUDIO/VIDEO jack left or right
Measuring Instrument	Audio level meter
Adjustment Page	С
Adjustment Address	4C
Specified Value	$-7.5 \pm 2.0$ dBs

Note: The data of page: 0, address: 10 must be "00".

#### Adjusting method:

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Set the Hi-Fi SOUND switch (menu display) to "1".
- Select page: C, address: 4C, change the data and set the 400Hz signal level to the specified value.
- 4) Press the PAUSE button.
- 5) Set the Hi-Fi SOUND switch (menu display) to "STEREO".
- 6) Select page: 0, address: 01, and set data: 00.

## 3. Hi8/Standard8 AFM 1.7 MHz Deviation Adjustment (VC-278 board)

Adjust to the optimum 1.7MHz audio FM signal deviation. If improper, this causes deteriorated separation (with stereo signal).

Mode	Playback
Signal	Hi8/Standard8 alignment tape:
	For checking AFM stereo operation
	Monoscope section
	(WR5-9NS (NTSC), WR5-9CS (PAL))
Measurement Point	AUDIO/VIDEO jack left or right
Measuring Instrument	Oscilloscope
Adjustment Page	С
Adjustment Address	4D
Specified Value	$-7.5 \pm 2.0$ dBs

Note: The data of page: 0, address: 10 must be "00".

#### Adjusting method:

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Set the Hi-Fi SOUND switch (menu display) to "2".
- 3) Select page: C, address: 4D, change the data and set the 1kHz signal level to the specified value.
- 4) Press the PAUSE button.
- 5) Set the Hi-Fi SOUND switch (menu display) to "STEREO".
- 6) Select page: 0, address: 01, and set data: 00.

#### 4. Digital8 Playback Level Check

Mode	Playback
Signal	Digital8 alignment tape: For audio operation check (WR5-3ND (NTSC), WR5-3CD (PAL))
Measurement Point	AUDIO/VIDEO jack left or right
Measuring Instrument	Audio level meter and frequency counter
Specified Value	32 kHz mode: 1 kHz, +3.0 ± 2.0dBs 48 kHz mode: 1 kHz, +3.0 ± 2.0dBs 44.1 kHz mode: The 7.35kHz signal level during EMP OFF is +2.0 ± 2.0dBs. The 7.35kHz signal level during EMP ON is -6 ± 2 dB from the signal level during EMP OFF.

#### **Checking Method:**

1) Check that the playback signal level is the specified value.

#### 5. Overall Level Characteristics Check

Mode	Recording and playback
Signal	400Hz, –66dBs signal: MIC jack left and right
Measurement Point	AUDIO/VIDEO jack left or right
Measuring Instrument	Audio level meter
Specified Value	$-7.5 \pm 3.0$ dBs

#### **Checking Method:**

- 1) Input the 400Hz, -66dBs signal in the MIC jack left and right.
- 2) Record the signal.
- 3) Playback the recorded section.
- 4) Check that the 400Hz signal level is the specified value.

#### 6. Overall Distortion Check

Mode	Recording and playback
Signal	400Hz, –66dBs signal: MIC jack left and right
Measurement Point	AUDIO/VIDEO jack left or right
Weasurement I out	AODIO/ VIDLO Jack left of fight
Measuring Instrument	Audio distortion meter
Specified Value	Below 0.4%
•	(200Hz to 6kHz BPF ON)

#### **Checking Method:**

- 1) Input the 400Hz, -66dBs signal in the MIC jack left and right.
- 2) Record the signal.
- 3) Playback the recorded section.
- 4) Check that the distortion is the specified value.

#### 7. Overall Noise Level Check

Mode	Recording and playback
Signal	No signal: MIC jack left and right
Measurement Point	AUDIO/VIDEO jack left or right
Measuring Instrument	Audio level meter
Specified Value	Below –45dBs (IHF-A filter ON, 20kHz LPF ON)

#### **Checking Method:**

- 1) Connect the left terminal of MIC jack and its ground terminal with a jumper wire.
- Connect the right terminal of MIC jack and its ground terminal with a jumper wire.
- 3) Record the signal.
- 4) Playback the recorded section.
- 5) Check that the noise level is the specified value.
- 6) Remove the jumper wires.

#### 8. Overall Separation Check

Mode	Recording and playback
Signal	No signal: MIC jack <left> [right] 400Hz, -66dBs signal: MIC jack <right> [left]</right></left>
Measurement Point	AUDIO/VIDEO jack <left> [right]</left>
Measuring Instrument	Audio level meter
Specified Value	Below –40dBs

<>: Left channel check

[]: Right channel check

#### **Checking Method:**

- 1) Connect the <left> [right] terminal of MIC jack and its ground terminal with a jumper wire.
- 2) Input the 400Hz, -66dBs signal in the MIC jack <right> [left].
- 3) Record the signal.
- 4) Playback the recorded section.
- Check that the signal level of the AUDIO/VIDEO jack <left> [right] is the specified value.
- 6) Remove the jumper wire.

#### 5-4. SERVICE MODE

#### 4-1. ADJUSTMENT REMOTE COMMANDER

The adjustment remote commander is used for changing the calculation coefficient in signal processing, EVR data, etc. The adjustment remote commander performs bi-directional communication with the unit using the remote commander signal line (LANC). The resultant data of this bi-directional communication is written in the non-volatile memory.

#### 1. Using the Adjustment Remote Commander

- Connect the adjustment remote commander to the LANC terminal.
- Set the HOLD switch of the adjustment remote commander to "HOLD" (SERVICE position). If it has been properly connected, the LCD on the adjustment remote commander will display as shown in Fig. 5-4-1.



Fig. 5-4-1.

- 3) Operate the adjustment remote commander as follows.
  - · Changing the page

The page increases when the EDIT SEARCH+ button is pressed, and decreases when the EDIT SEARCH– button is pressed. There are altogether 20 pages, from 0 to F, 1B, 1C, 1E, 1F (Note1).

Hexadecimal notation	0	1	2	3	4	5	6	7	8	9	A	В	С	D	Е	F
LCD Display	0	1	2	3	Ч	5	5	7	8	9	Я	Ь	С	Ь	Ε	F
Decimal notation conversion value	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

#### · Changing the address

The address increases when the FF ( $\blacktriangleright \blacktriangleright$ ) button is pressed, and decreases when the REW ( $\blacktriangleleft \blacktriangleleft$ ) button is pressed. There are altogether 256 addresses, from 00 to FF.

- Changing the data (Data setting)
   The data increases when the PLAY (►) button is pressed, and decreases when the STOP (■) button is pressed. There are altogether 256 data, from 00 to FF.
- Writing the adjustment data
  The PAUSE button must be pressed to write the adjustment data (8, A, B, C, D, E, F, 1B, 1C, 1E, 1F page) in the nonvolatile memory. (The new adjusting data will not be recorded in the nonvolatile memory if this step is not performed.)(Note2)
- 4) After completing all adjustments, turn off the main power supply (8.4 V) once.

Note: When reading or writing the 1B, 1C, 1E, 1F page data, select page: 0, address: 10, and set data: 01, then select B, C, E or F page. The 1B, 1C, 1E or 1F page can be chosen by this data setting.

After reading or writing, reset the data of page: 0, address: 10 to "00".

## 2. Precautions Upon Using the Adjustment Remote Commander

Mishandling of the adjustment remote commander may erase the correct adjustment data at times. To prevent this, it is recommended that all adjustment data be noted down before beginning adjustments and new adjustment data after each adjustment.

#### 4-2. DATA PROCESS

The calculation of the DDS display and the adjustment remote commander display data (hexadecimal notation) are required for obtaining the adjustment data of some adjustment items. In this case, after converting the hexadecimal notation to decimal notation, calculate and convert the result to hexadecimal notation, and use it as the adjustment data. Indicates the hexadecimal-decimal conversion table.

He	kadecimal-deci	mal C	onver	sion T	able										2		
	Lower digit of hexadecimal  Upper digit of hexadecimal	0	1	2	3	4	5	6	7	8	9	A (₽)	В (b)	( <sup>C</sup> )	(년) D	E (E)	F (F)
Ì	0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
İ	1	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
İ	2	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
Ī	3	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
Ī	4	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
Ī	5	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
	6	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
	7	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
	8	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
	9	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
Ī	A (A)	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
①	В (Ь)	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
Ī	C (c)	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
Ī	D (占)	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
Ī	E ( <i>E</i> )	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
	F (F)	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255

**Note:** The characters shown in the parenthesis ( ) shown the display on the adjustment remote commander.

**(Example)** If the DDS display or the adjustment remote commander shows BD (ロロ);

Because the upper digit of the adjustment number is B ( $\frac{1}{2}$ ), and the lower digit is D ( $\frac{1}{2}$ ), the meeting point "189" of ① and ② in the above table is the corresponding decimal number.

Table. 5-4-1.

#### 4-3. SERVICE MODE

**Note:** Before performing the adjustments, check the data of page : 0, address: 10 is "00". If not, set data: 00 to this address.

#### Additional note on adjustment

**Note1:** After the completion of the all adjustments, cancel the service mode by either of the following ways.

- After data on page: C and D is restored, unplug the main power supply and remove the coin lithium battery. (In this case, date and time and menu setting have been set by users are canceled. Perform resetting.)
- 2) After data on page: C and D is restored, select page: 0, address: 01, and return the data to 00. And when data on page:2 and 3 are changed, return data to the original condition.

**Note2:** Before performing the adjustments, check the data of page: 0, address: 10 is "00". If not, set data: 00 to this address.

#### 1. Setting the Test Mode

1		
	Page C	Address 3E

Data	Function
00	Normal
01	Test mode Various emergency prohibitions and releases Drum emergency, capstan emergency, loading motor emergency, reel emergency, tape top and end, DEW detection

Page D	Address 10
--------	------------

Data	Function			
00	Normal			
01	Forced camera power ON			
02	Forced VTR power ON			

- Before setting the data, select page: 0, address: 01, and set data: 01.
- For page C and D, the data set will be recorded in the non-volatile memory by pressing the PAUSE button of the adjustment remote commander. In this case, take note that the test mode will not be exited even when the main power is turned off (8.4Vdc).
- After completing adjustments/repairs, be sure to return the data of page: C address: 3E to 00, and the data of page: D address: 10 to 00, and press the PAUSE button of the adjustment remote commander. And select page: 0, address: 01, and set data: 00.

#### 2. Emergence Memory Address

Page C	Address F4 to FF
--------	------------------

Address	Contents
F4	EMG code when first error occurs
F6	Upper: MSW code when shift starts when first error occurs
	Lower: MSW code when first error occurs
F7	Lower: MSW code to be moved when first error occurs
F8	EMG code when second error occurs
FA	Upper: MSW code when shift starts when second error occurs  Lower: MSW code when second error occurs
FB	Lower: MSW code to be moved when second error occurs
FC	EMG code when last error occurs
FE	Upper: MSW code when shift starts when last error occurs  Lower: MSW code when last error occurs
FF	Lower: MSW code to be moved when last error occurs

When no error occurs in this unit, data "00" is written in the above addresses (F4 to FF). when first error occurs in the unit, the data corresponding to the error is written in the first emergency address (F4 to F7). In the same way, when the second error occurs, the data corresponding to the error is written in the second emergency address (F8 to FB).

Finally, when the last error occurs, the data corresponding to the error is written in the last emergency address (FC to FF).

**Note:** After completing adjustments, be sure to initialize the data of addresses F4 to FF to "00".

#### **Initializing method:**

- 1) Select page: 0, address: 01, and set data: 01.
- Select page: 3, address: 01, set data: 37, and press the PAUSE button.
- 3) Select page: 0, address: 01, and set data: 00.

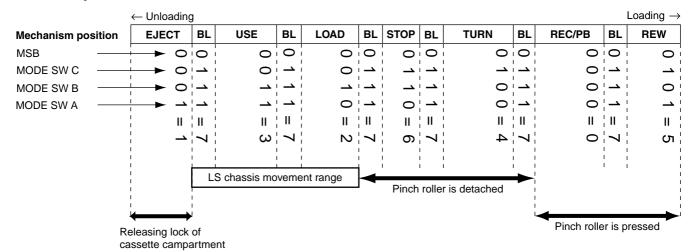
## 2-1. EMG Code (Emergency Code)

Codes corresponding to the errors which occur are written in C page, addresses F4, F8 and FC. The type of error indicated by the code are shown in the following table.

Code	Emergency Type	
00	No error	
10	Loading motor emergency during loading	
11	Loading motor emergency during unloading	
22	T reel emergency during normal rotation	
23	S reel emergency during normal rotation	
24	T reel emergency (Short circuit between S reel	
24	terminal and T reel terminal)	
30	FG emergency at the start up of the capstan	
40	FG emergency at the start up of the drum	
42	FG emergency during normal rotation of the drum	

#### 2-2. MSW Code

- The lower parts of the data of C page, addresses F6, FA and FE represent the MSW codes (mode switch mechanism position) when errors occurs.
- The upper parts of the data of C page, addresses F6, FA and FE represent, when the mechanism position is to be moved, the MSW codes at the start movement (when moving the loading motor).
- The lower parts of the data of C page, addresses F7, FB and FF represent the MSW codes of the desired movement when the mechanism position is to be moved.

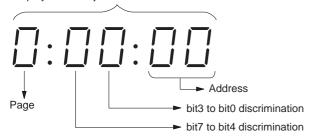


Mechanism Position	MSW Code	Contents
EJECT	1	Position at which the cassette compartment lock is released. The mechanism will not move any further in the unloading direction.
BL	7	BLANC code. Between two codes. The mechanism will not be stopped by this code while it is operating.
USE	3	EJECT completion position. When the cassette is ejected, the mechanism will stop at this position.
LOAD	2	Code during loading/unloading. Code that is used while the LS chassis is moving.
STOP	6	Normal stop position. The pinch roller separates, the tension regulator returns, and the brakes of both reels turn on.
TURN	4	Position at which is used when the pendulum gear swings from S to T or from T to S.
REC/PB	0	PB, REC, CUE, REV, PAUSE, FF positions. The pinch roller is pressed and tension regulator is on.
REW	5	REW position. REW are carried at this position.  The mechanism will not move any further in the loading direction.

#### 3. Bit Value Discrimination

Bit values must be discriminated using the display data of the adjustment remote commander for the following items. Us the table below to discriminate if the bit value is "1" or "0".

Display on the adjustment remote commander



(Example)

If the remote commander display is "8E", bit value from bit 7 to bit 4 can be discriminated from the column A, and those from bit 3 to bit 0 from column B.

	Display on the		Bit va	alues	
	adjustment	bit3	bit2	bit1	bit0
	remote	or	or	or	or
	commander	bit7	bit6	bit5	bit4
	0	0	0	0	0
	1	0	0	0	1
	2	0	0	1	0
	3	0	0	1	1
	4	0	1	0	0
	5	0	1	0	1
	6	0	1	1	0
	7	0	1	1	1
A	8	1	0	0	0
	9	1	0	0	1
	A (月)	1	0	1	0
	В (Ъ)	1	0	1	1
	C ([)	1	1	0	0
	D (d)	1	1	0	1
$^{f B}$	E ( <i>E</i> )	1	1	1	0
	F (F)	1	1	1	1

#### 4. Switch check (1)

• • •	
Page 7	Address 0E

Bit	Function	When bit value = 1	When bit value = 0
0	POWER SW (VTR MODE SW) (SS-1380 block S001)	ON (VCR/PLAYER)	OFF
1	POWER SW (CAM MODE SW) (SS-1380 block S001)	ON (CAMERA)	OFF
2	START/STOP SW (SS-1380 block S002)	ON	OFF
3	EJECT SW (SS-1380 block S003)	ON	OFF
4	CC DOWN SW (Mechanism chassis)	ON (DOWN)	OFF (UP)
5	PHOTO FREEZE SW (SS-1380 block S004)	ON	OFF
6	POWER SW (PHOTO STBY SW) (SS-1380 block S001)	ON (MEMORY)	OFF
7			

#### Using method:

- 1) Select page: 7, address: 0E.
- 2) By discriminating the bit value of display data, the state of the switch can be discriminated.

## 5. Switch check (2)

	Page 7	Address 0C
--	--------	------------

Bit	Function	When bit value = 1	When bit value = 0
1	AUDIO/VIDEO jack (FP-410 flexible J201)	Used	Not used
2	S VIDEO jack (FP-410 flexible J201)	Used	Not used
3	MIC jack (FP-411 flexible J302)	Used	Not used

## Using method:

- 1) Select page: 7, address: 0C.
- 2) By discriminating the bit value of display data, the state of the switch can be discriminated.

#### 6. Switch check (3)

Page 3	Address 61
Page 3	Address 01

Bit	Function	When bit value = 1	When bit value = 0
6	HEADPHONS jack (FP-411 flexible J301)	Used	Not used

#### **Using method:**

- 1) Select page: 3, address: 61.
- 2) By discriminating the bit value of display data, the state of the switch can be discriminated.

## 7. Switch check (4)

Page 2	Address 60 to 65
· ·	

#### **Using method:**

- 1) Select page: 2, address: 60 to 65.
- 2) By discriminating the display data, the pressed key can be discriminated.

Adduss		Data						
Address	00 to 0C	0D to 24	25 to 3F	40 to 5D	5E to 81	82 to AA	AB to D7	D8 to FF
60 (KEY AD0) (IC5001 <b>⑤</b> 9)	SUPER NIGHT SHOT (FK-2500) (S401)	STOP (FK-2500) (S404)	FF (FK-2500) (S407)	REW (FK-2500) (S409)	PLAY (FK-2500) (S403)	REC (FK-2500) (S406,408)		No key input
61 (KEY AD1) (IC5001 <b>@</b> )	PAUSE (FK-2500) (S405)	FOCUS (CF-2500) (S004)	BACK LIGHT (CF-2500) (S016)	FADER (CF-2500) (S010)	EXPOSURE (CF-2500) (S027)	MENU EXECUTE (CF-2500) (S007)	PANEL CLOSE (CF-2500) (S001)	PANEL OPEN (CF-2500) (S001)
62 (KEY AD2) (IC5001 <b>(6)</b> )		EDIT SEARCH + (CF-2500) (S024)	EDIT SEARCH – (CF-2500) (S025)					No key input
63 (KEY AD3) (IC5001 <b>6</b> 5)	` ′	PB ZOOM (CF-2500) (S006)	TITLE (CF-2500) (S009)	MENU (CF-2500) (S012)	VOLUME + (CF-2500) (S015)	VOLUME – (CF-2500) (S022)	DISPLAY (CF-2500) (S019)	No key input
64 (KEY AD4) (IC5001 66)	MEMORY INDEX (CF-2500) (S026)	MPEG PLAY (CF-2500) (S005)	MEMORY MIX (CF-2500) (S029)	MEMORY DELETE (CF-2500) (S028)	MEMORY + (CF-2500) (S013)	MEMORY – (CF-2500) (S017)	MEMORY PLAY (CF-2500) (S018)	No key input
65 (KEY AD5) (IC5001 <b>⑥</b> )		PHOTO (PHOTO START) (SS-1380) (S004)	PANEL REVERSE (FP-412) (S601)					PANEL NORMAL (FP-412) (S601)

## 8. Record of Use check (1)

Page 7	Address C8 to CD
--------	------------------

Address	Function		Remarks
C8	User initial power	Year	
C9	on date	Month	After setting the clock, set the date of power on next
CA	(BCD code)	Day	
СВ	Final condensation	Year	
CC	occurrence date	Month	
CD	(BCD code)	Day	

## Using method:

1) The record of use data is displayed at addresses: A2 to AA.

**Note:** This data will be kept even if the lithium battery (CF-2500 block BT101) is removed.

#### 9. Record of Use check (2)

Page 7 Address A7 to A9
-------------------------

Address	Function		Remarks
A7	Drum rotation counted time	Hour (H)	100000 place digit and 10000 place digit (decimal digit)
A8	(BCD code)	Hour (M)	1000 place digit and 100 place digit (decimal digit)
A9		Hour (L)	10 place digit and 1 place digit (decimal digit)

#### Using method:

1) The record of use data is displayed at addresses: A7 to A9.

Note: This data will be kept even if the lithium battery (CF-2500 block BT101) is removed.

#### **Initializing method:**

- 1) Select page: 7, address: 00, set data: 71, and press PAUSE button.
- 2) Select page: 7, address: 01, set data: 71, and press PAUSE button.
- 3) Select page: 7, address: 02, and check the data is "01".

## 10. Record of Self-diagnosis check

Page 7	Address B0 to C6

Address	Self-diagnosis code
B0	"Repaired by" code (Occurred 1st time) *1
B1	"Block function" code (Occurred 1st time)
B2	"Detailed" code (Occurred 1st time)
B4	"Repaired by" code (Occurred 2nd time) *1
B5	"Block function" code (Occurred 2nd time)
B6	"Detailed" code (Occurred 2nd time)
B8	"Repaired by" code (Occurred 3rd time) *1
B9	"Block function" code (Occurred 3rd time)
BA	"Detailed" code (Occurred 3rd time)
BC	"Repaired by" code (Occurred 4th time) *1
BD	"Block function" code (Occurred 4th time)
BE	"Detailed" code (Occurred 4th time)
C0	"Repaired by" code (Occurred 5th time) *1
C1	"Block function" code (Occurred 5th time)
C2	"Detailed" code (Occurred 5th time)
C4	"Repaired by" code (Occurred the last time) *1
C5	"Block function" code (Occurred the last time)
C6	"Detailed" code (Occurred the last time)

\*1: "01" 
$$\to$$
 "C", "03"  $\to$  "E"

## Using method:

1) The past self-diagnosis codes are displayed at addresses: BC to C6. Refer to "SELF-DIAGNOSIS FUNCTION" for detail of the self-diagnosis code.

**Note:** This data will be kept even if the lithium battery (CF-2500 block BT101) is removed.



## **SECTION 6 REPAIR PARTS LIST**

#### 6-1. EXPLODED VIEWS

NOTE:

-XX, -X mean standardized parts, so they may have some differences from the original one.

Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The mechanical parts with no reference number in the exploded views are not supplied.

Abbreviation

CND : Canadian model KR : Korea model JΕ : Tourist model : Australian model AUS : Hong Kong model HK CH: Chinese model EE : East European model

: North European model NE RU : Russian model AR : Argentina model

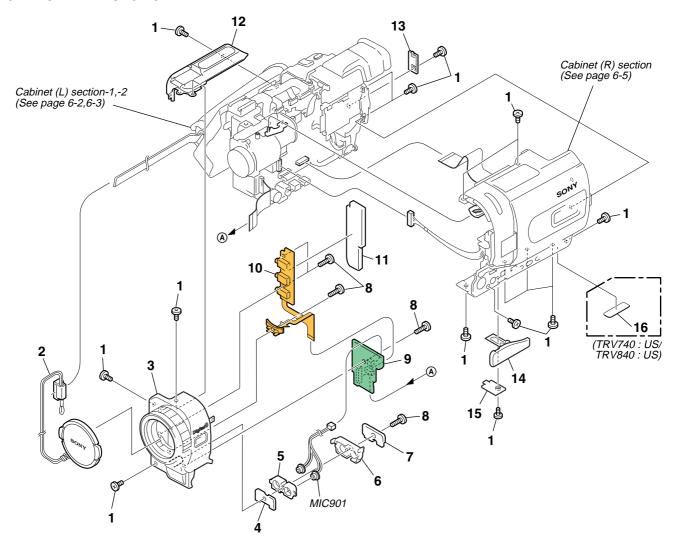
The components identified by mark ∆or dotted line with mark  $\triangle$  are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque 

Ne les remplacer que par une pièce portant

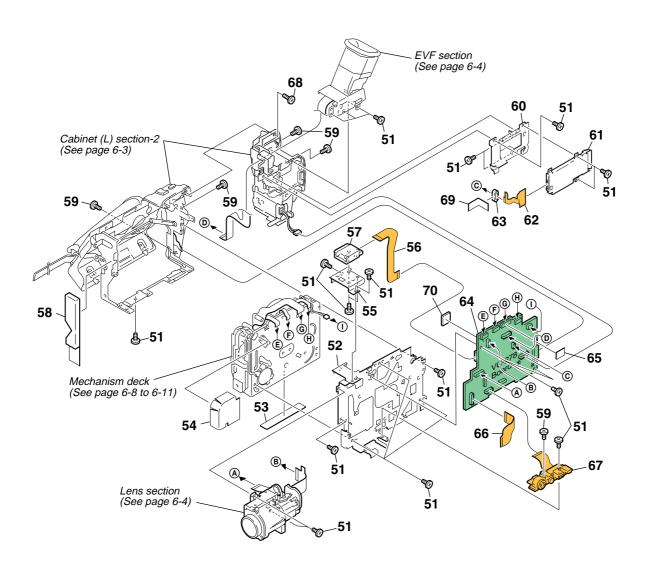
le numéro spécifié.

#### 6-1-1. OVERALL SECTION



Ref. No.	Part No.	Description	Ref. No.	Part No.	<u>Description</u>
1	3-067-347-01	MI SCREW M2 (H)	10	1-683-627-21	FP-411 FLEXIBLE BOARD
2	X-3949-376-1	CAP (N) ASSY, LENS	11	3-072-309-01	CUSHION (1), F
3	X-3952-247-1	PANEL ASSY (25), F	12	3-065-326-01	CABINET (UPPER)
4	3-072-279-01	CUSHION (F), MICROPHONE	13	3-072-271-01	LID (BT), CPC
5	3-072-278-01	HOLDER, MICROPHONE	14	3-072-343-01	COVER, JACK
6	3-072-277-01	RETAINER, MICROPHONE	15	3-072-344-01	RETAINER, JACK COVER
7	3-072-307-01	SHEET, MICROPHONE	* 16	3-704-367-01	LABEL (TRV740:US/TRV840:US)
8	3-065-567-01	TAPPING (M1.7)	MIC901	1-542-477-11	MICROPHONE
9	A-7078-047-A	SI-032 BOARD, COMPLETE			

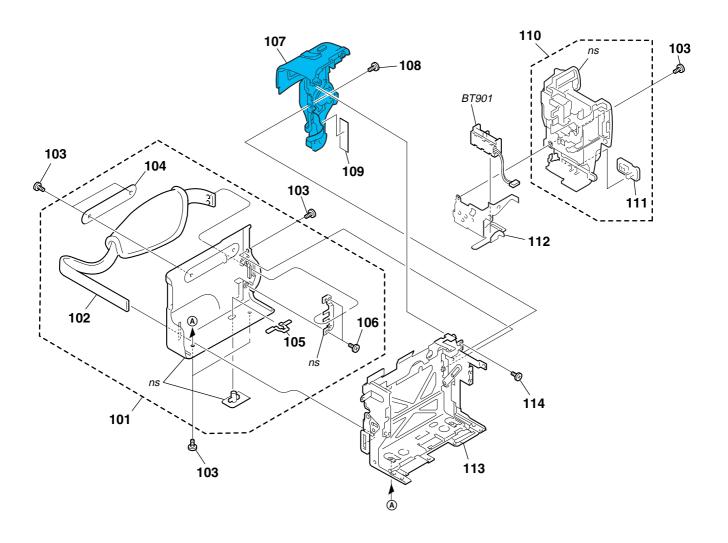
## 6-1-2. CABINET (L) SECTION-1



Ref. No.	Part No.	<u>Description</u>	Ref. No.	Part No.	Description
51	4-974-725-01	SCREW (M1.7X2.5), P	64	A-7012-212-A	VC-278 (GNA) BOARD, COMPLETE (SERVICE)
52	3-072-267-01	FRAME, MD			(TRV740/TRV840)
53	3-065-662-01	LABEL, LS CAUTION	64	A-7012-362-A	VC-278 (GPAO) BOARD, COMPLETE (SERVICE)
54	3-066-169-01	SHEET, MD			(TRV738E)
55	3-072-268-01	FRAME, SHOE			
			64	A-7012-363-A	VC-278 (GPA) BOARD, COMPLETE (SERVICE)
56	1-680-118-11	FP-264 FLEXIBLE BOARD			(TRV740E)
57	1-815-124-11	CONNECTOR, EXTERNAL (HOT SHOE)	65	3-066-759-01	SHEET, VC
58	3-072-308-01	COVER, MD	66	1-683-623-11	FP-406 FLEXIBLE BOARD
59	3-067-347-01	MI SCREW M2 (H)			
60	3-072-273-01	HOLDER, MS	67	1-683-626-21	FP-410 FLEXIBLE BOARD
			68	3-065-567-01	TAPPING (M1.7)
61	1-816-271-11	CONNECTOR, MEMORY STICK 10P	69	3-941-343-21	TAPE (A)
62	1-683-625-11	FP-409 FLEXIBLE BOARD	70	3-075-983-01	SHEET (25) 2, M
63	1-500-226-11	BEAD, FERRITE			•

## 6-1-3. CABINET (L) SECTION-2

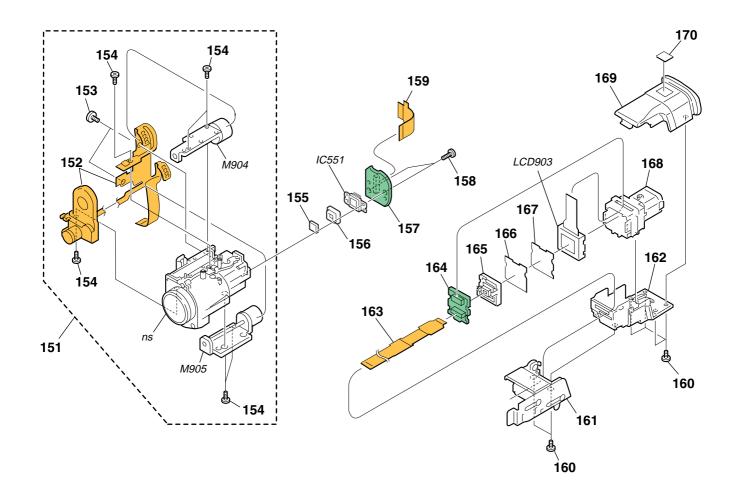
ns : not supplied



Ref. No.	Part No.	<u>Description</u>	Ref. No.	Part No.	<u>Description</u>
101	X-3951-159-1	CABINET (L) ASSY	108	4-974-725-01	SCREW (M1.7X2.5), P
102	3-052-815-01	BELT (ES), GRIP	109	3-941-343-21	TAPE (A)
103	3-067-347-01	MI SCREW M2 (H)	110	X-3952-148-1	PANEL ASSY (MS), BATTERY
104	3-065-308-01	LABEL (L)	111	3-072-305-01	LID (2500), JACK
105	3-978-765-01	SLIDER, G LOCK	112	3-072-274-01	SHEET METAL (LOWER), STRAP
106	3-713-791-01	SCREW (M1.7X4), TAPPING, P2	113	X-3952-136-1	FRAME ASSY (25), CS
107	1-476-415-11	SWITCH BLOCK, CONTROL (SS-1380)	114	3-065-567-01	TAPPING (M1.7)
		(TRV740/TRV740E/TRV840)	BT901	1-694-772-11	TERMINAL BOARD, BATTERY
107	1-476-415-31	SWITCH BLOCK, CONTROL (SS-1380)			
		(TRV738E)			

## 6-1-4. LENS, EVF SECTION

ns : not supplied

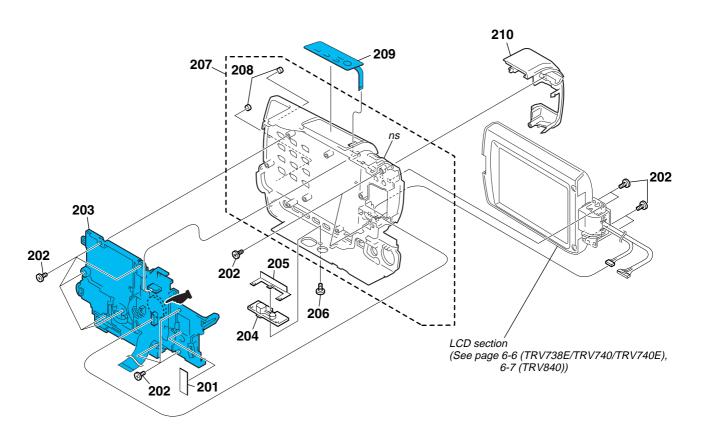


Be sure to read "Precautions upon replacing CCD imager" on page 4-7 when changing the CCD imager.

Ref. No.	Part No.	<u>Description</u>	Ref. No.	Part No.	<u>Description</u>
151	8-848-754-01	DEVICE, LENS LSV-740A	163	1-683-624-11	FP-407 FLEXIBLE BOARD
152	1-758-743-11	IRIS (IR740)	164	A-7078-049-A	LB-076 BOARD, COMPLETE
153	3-056-022-01	TAPPING (B1.7X3.5), HEAD	165	3-065-058-01	GUIDE, LAMP
154	3-713-791-35	SCREW (M1.7X5), TAPPING, P2	166	3-072-211-01	ILLUMINATOR
155	1-758-569-11	FILTER BLOCK, OPTICAL	167	3-072-210-01	SHEET, PRISM
156	3-053-973-01	RUBBER (W), SEAL	168	X-3952-214-1	LENS (B) ASSY, VF
157	A-7078-109-A	CD-358 BOARD, COMPLETE	169	X-3952-142-1	CABINET (UPPER) ASSY, EVF
158	3-318-203-11	SCREW (B1.7X6), TAPPING	170	3-065-376-01	LABEL (138), B
159	1-680-120-11	FP-317 FLEXIBLE BOARD	IC551	A-7012-228-A	CCD BLOCK ASSY (CCD IMAGER)
160	3-065-567-01	TAPPING (M1.7)	LCD903	8-753-028-49	LCX032AP-5
161	X-3951-165-1	HINGE ASSY, VF	M904	1-763-806-11	MOTOR, STEPPING Z740A (ZOOM)
162	X-3952-143-1	CABINET (LOWER) ASSY, EVF	M905	1-763-807-11	MOTOR, STEPPING F740A (FOCUS)

## 6-1-5. CABINET (R) SECTION

ns: not supplied



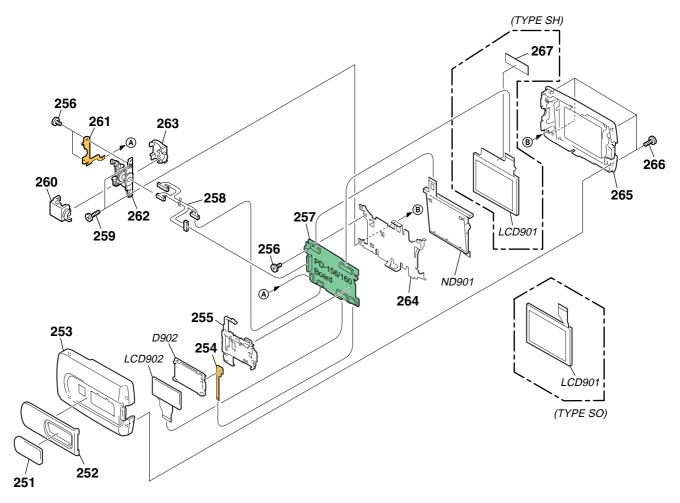
: The printed wiring board of the Control switch block (CF-2500) on which BT001 (lithium battery) is mounted, is not shown.

## **CAUTION:**

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type.

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
			208	3-959-978-02	CUSHION, PANEL
201	3-941-343-21	TAPE (A)	209	1-477-084-41	•
202	3-948-339-61	TAPPING	203	1-4//-004-41	,
203	1-477-085-21	SWITCH BLOCK, CONTROL (CF-2500)			(TRV738E)
		, , ,	209	1-477-084-51	SWITCH BLOCK, CONTROL (FK-2500)
204	3-065-373-01	SCREW (Y), TRIPOD			(TRV740/TRV740E/TRV840)
205	3-072-455-01	RETAINER, TRIPOD	210	X-3952-141-1	RING (2) ASSY, ORNAMENTAL (TRV740)
			210	X-3952-169-1	RING (2) ASSY, ORNAMENTAL
206	3-067-347-01	MI SCREW M2 (H)			(TRV738E/TRV740E)
207	X-3952-140-1	CABINET R (2) ASSY (TRV740)			(111V730E/111V740E)
207	X-3952-146-1	CABINET R (2) ASSY (TRV738E)	010	V 0050 107 1	DINC (2) ACCV ODNAMENTAL (TDV040)
207	X-3952-186-1	CABINET R (3) ASSY (TRV840)	210	X-3952-187-1	RING (3) ASSY, ORNAMENTAL (TRV840)
207	X-3952-253-1	CABINET R (2) ASSY (TRV740E)			

## 6-1-6. LCD SECTION (2.5 INCH LCD MODEL) (TRV738E/TRV740/TRV740E)



TYPE SH:TRV738E/TRV740E:AEP,EE,NE,RU
TYPE SO:TRV740/TRV740E:E,HK,AUS,CH,JE

Ref. No.	Part No.	<u>Description</u>		Ref. No.	Part No.	Description
251	3-072-272-11	WINDOW, LCD (TRV740)		263	3-072-287-11	COVER (M), HINGE
251	3-072-272-21	WINDOW, LCD (TRV738É)		264	3-072-403-01	FRAME (2), P
251	3-072-272-31	WINDOW, LCD (TRV740E)		265	X-3952-151-1	P CABINET M (2) ASSY (M)
252	X-3952-197-1	COVER (2) ASSY (M), CPC		266	3-065-567-01	TAPPING (M1.7)
253	3-072-341-11	CABINET (C (2)), P		267	3-075-098-01	SHEET (SH), LCD INSULATING
						(TYPE SH MODEL)
254	1-683-629-11	FP-414 FLEXIBLE BOARD				
255	3-072-286-01	HOLDER, LCD		<b>△</b> D902	1-518-721-11	LIGHT, BACK
256	4-974-725-01	SCREW (M1.7X2.5), P		<b>△</b> ND901	1-518-796-11	TUBE, FLUORESCENT, COLD CATHODE
257	A-7078-052-A	PD-160 (X6)(S0) BOARD, C	OMPLETE			(TYPE SO MODEL)
			(TYPE SO MODEL)	<b>△</b> ND901	1-518-798-21	TUBE, FLUORESCENT, COLD CATHODE
257	A-7078-096-A	PD-156 (XC12)(SH) BOARD,	COMPLETE			(TYPE SH MODEL)
			(TYPE SH MODEL)	LCD901	1-803-853-21	INDICATOR MODULE LIQUID CRYST
			,			(TYPE SH MODEL)(Note)
258	1-961-556-11	HARNESS (PD-117)		LCD901	8-753-050-65	ACX308AK-1 (TYPE SO MODEL)(Note)
259	3-318-203-11	SCREW (B1.7X6), TAPPING				
260	3-072-288-11	COVER (C), HINGE		LCD902	A-7012-233-A	INDICATION LCD BLOCK ASSY
261	1-683-628-21	FP-412 FLEXIBLE BOARD				
262	X-3952-147-1	HINGE ASSY				

Note: LCD901 type check is refer to page 5-32 for "1-5-1. LCD Type Check" of this manual .

#### Note:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.

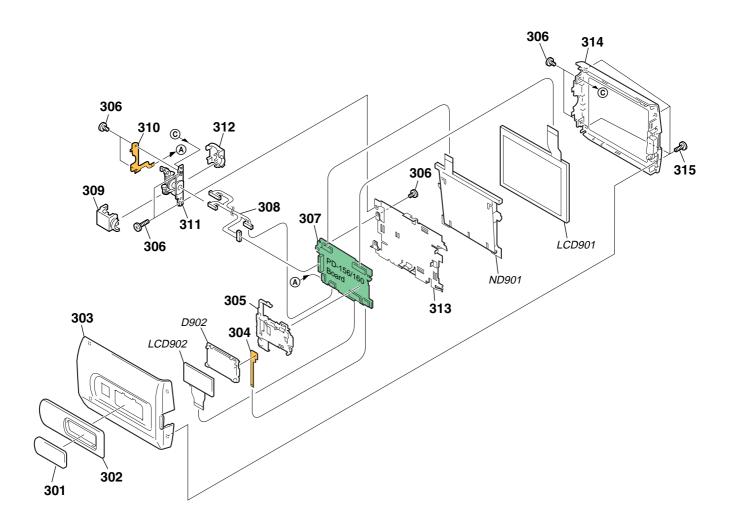
Replace only with part number specified.

#### Note :

Les composants identifiés par une marque  $ext{$\Delta$}$  sont critiques pour la sécurité. Ne les remplacer que par une

pièce portant le numéro spécifié.

## 6-1-7. LCD SECTION (3.5 INCH LCD MODEL) (TRV840)



Ref. No.	Part No.	<u>Description</u>	Ref. No.	Part No.	<u>Description</u>
301	3-072-272-41	WINDOW, LCD	310	1-683-628-21	FP-412 FLEXIBLE BOARD
302	X-3952-198-1	COVER (3) ASSY (M), CPC	311	X-3952-147-1	HINGE ASSY
303	X-3952-153-1	CABINET (C) (3) ASSY (M), P	312	3-072-287-11	COVER (M), HINGE
304	1-683-629-11	FP-414 FLEXIBLE BOARD	313	3-072-289-01	FRAME (3), P
305	3-072-286-01	HOLDER, LCD	314	X-3952-152-1	CABINET (M) (3) ASSY (M), P
306	4-974-725-01	SCREW (M1.7X2.5), P	315	3-065-567-01	TAPPING (M1.7)
307	A-7078-145-A	PD-160 (ZS12)(SO) BOARD, COMPLETE	<b>△</b> D902	1-518-721-11	LIGHT, BACK
		(TYPE SO MODEL)	<b>⚠ ND901</b>	1-517-855-31	TUBE, FLUORESCENT, COLD CATHODE
307	A-7078-152-A	PD-156 (ZC12)(CA) BOARD, COMPLETE	LCD901	1-803-861-31	INDICATOR MODULE LIQUID CRYST
		(TYPE CA MODEL)			(TYPE CA MODEL)(Note)
308	1-961-556-11	HARNESS (PD-117)	LCD901	8-753-051-00	ACX310AK-1 (TYPE SO MODEL)(Note)
309	3-072-288-11	COVER (C), HINGE			
			LCD902	A-7012-233-A	INDICATION LCD BLOCK ASSY

Note: LCD901 type check is refer to page 5-32 for "1-5-1. LCD Type Check" of this manual.

#### Note :

The components identified by mark  $\triangle$  or dotted line with mark  $\triangle$  are critical for safety.

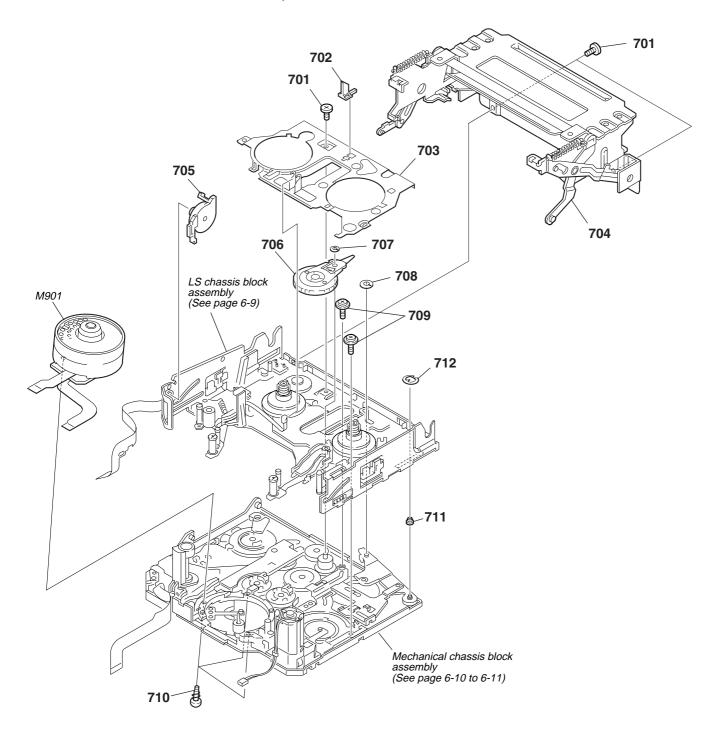
Replace only with part number specified.

#### Note :

Les composants identifiés par une marque  $\triangle$  sont critiques pour la sécurité.

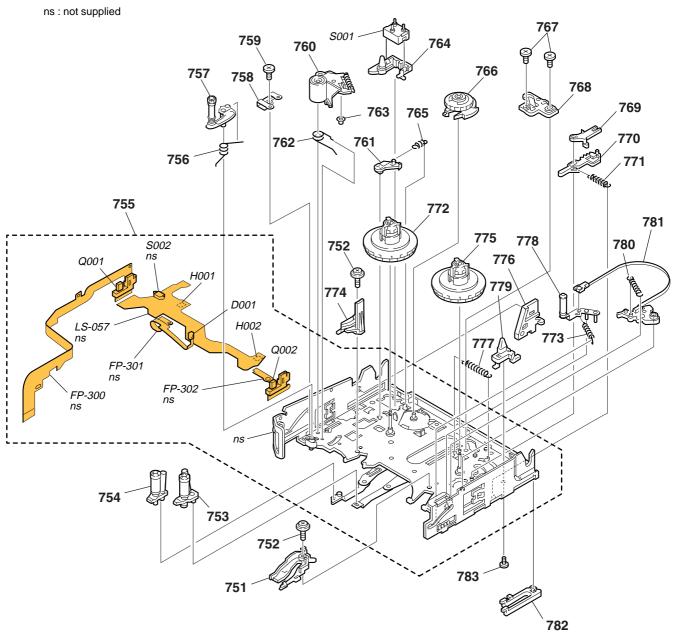
Ne les remplacer que par une pièce portant le numéro spécifié.

## 6-1-8. CASSETTE COMPARTMENT ASSY, DRUM ASSY



Ref. No.	Part No.	Description	Ref. No.	Part No.	<u>Description</u>
701	3-065-932-01	PAN (2 MAIN M1.4X1.6), CAMERA	708	3-065-935-01	HLC CUT 1.8X4X0.5
702	3-065-895-01	LEVER, REEL RELEASE	709	3-947-503-01	SCREW (M1.4)
703	3-065-896-01	PLATE, BLIND	710	X-3951-299-1	SCREW ASSY, DRUM FITTING
704	X-3951-298-1	CASSETTE COMPARTMENT ASSY	711	3-074-309-01	ROLLER A, LS GUIDE
705	X-3951-302-1	DAMPER ASSY	712	7-624-101-04	STOP RING 1.2 (E TYPE)
706	X-3951-297-1	GEAR ASSY, R DRIVE	M901	A-7048-951-A	DRUM (DKH-04A-R) (SERVICE)
707	3-065-840-01	CUT (0.98X3X0.13), LUMII FR (W)			

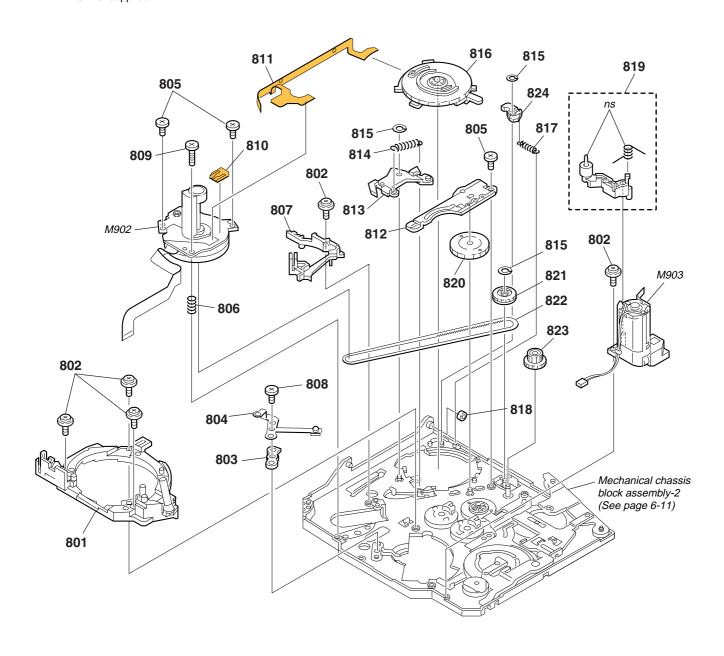
## 6-1-9. LS CHASSIS BLOCK ASSEMBLY



Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
751	3-065-822-02	RAIL (S), GUIDE	771	3-065-830-01	SPRING, S RATCHET
752	3-947-503-01	· /·	772	X-3951-288-1	· ·
753	A-7096-416-B	,	773	3-065-819-01	, ,
754		BASE (T) BLOCK ASSY, GUIDE	774	3-065-821-01	RAIL (T), GUIDE
755		CHASSIS ASSY, LS	775	X-3951-289-1	( //
		,			(0),
756	3-065-802-01	SPRING, TG7 ARM	776	3-065-833-01	GUIDE, LOCK
757	A-7096-414-A	ARM BLOCK ASSY, TG7	777	3-065-831-01	PLATE (SPR), RE RETURN
758	3-065-801-01	RETAINER, TG7	778	X-3951-304-1	ARM ASSY, TG1
759	3-065-932-01	PAN (2 MAIN M1.4X1.6), CAMERA	779	3-065-835-01	GUIDE (S), CASSETTE
760	X-3951-303-1	ARM ASSY, PINCH	780	3-065-820-01	SPRING, RVS ARM
761	3-065-823-01	ARM, T RATCHET	781	X-3951-296-1	BAND (ASSY), BT
762	3-065-794-01	ROAD (SPR), PINCH ARM	782	3-065-836-01	COVER, LS GREASE
763	3-065-792-01	ROLLER, P LIM ARM	783	3-067-167-01	SCREW (M1.4X2), CAMERA TAPPING
764	3-065-834-01	GUIDE (T), CASSETTE	D001	8-719-988-42	DIODE GL453 (TAPE LED)
765	3-065-824-01	SPRING, T RATCHET	H001	8-719-033-37	ELEMENT, HALL HW-105C (T REEL)
766	A-7096-417-A	SOFT ASSY, T	H002	8-719-033-37	ELEMENT, HALL HW-105C (S REEL)
767	7-627-852-38	SCREW,PRECISION +P1.7X1.8TYPE3	Q001	8-729-907-25	PHOTO TRANSISTOR PT4850F (TAPE TOP)
768	3-065-832-01	PLATE, LS CAM	Q002	8-729-907-25	PHOTO TRANSISTOR PT4850F (TAPE END)
769	3-065-828-01	ARM, S RATCHET	S001	1-692-614-11	SWITCH, PUSH (3 KEY) (REC PROOF)
770	3-065-829-01	PLATE, S RATCHET (RE)			

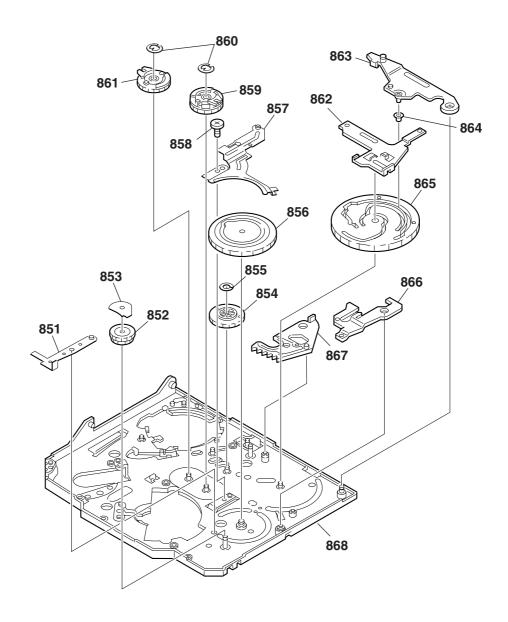
## 6-1-10. MECHANICAL CHASSIS BLOCK ASSEMBLY-1

ns: not supplied



Part No.	Description	Ref. No.	Part No.	<u>Description</u>
A-7096-422-A	BASE ASSY, DRUM	814	3-065-881-01	SPRING, P PRESSURE PLATE
3-947-503-01	SCREW (M1.4)	815	3-065-934-01	HLW CUT 0.98X3X0.25
3-065-928-01	SPACER, GROUND	816	1-786-096-11	SWITCH, ROTARY
3-065-927-01	GROUND, DRUM	817	3-065-898-01	SPRING, EJECT ARM
3-065-932-01	PAN (2 MAIN M1.4X1.6), CAMERA	818	3-065-870-01	ROLLER, LS GUIDE
3-067-154-01	SPRING, CAPSTAN	819	A-7096-421-A	ARM ASSY, HCL
3-065-931-01	RAIL (T2), GUIDE	820	3-065-918-01	GEAR (2), CAM RELAY
X-3947-398-1	SCREW ASSY, M1.7 PW	821	A-7096-419-A	GEAR ASSY, CHANGE
3-065-933-01	PAN (2 MAIN 1.4X4.5), CAMERA	822	3-065-902-01	BELT, TIMING
1-677-049-11	FP-228 FLEXIBLE BOARD	823	3-065-905-01	GEAR, RELAY
1-680-434-11	FP-299 FLEXIBLE BOARD	824	3-065-882-01	ARM, EJECT
3-065-877-01	PLATE (T), GUIDE LOCK	M902	8-835-701-01	MOTOR, DC SCE13A/C-NP (CAPSTAN)
X-3951-301-1	PLATE ASSY, PINCH PRESSURE	M903	A-7096-420-A	MOTOR ASSY, LD (LOADING)
	A-7096-422-A 3-947-503-01 3-065-928-01 3-065-927-01 3-065-932-01 3-065-931-01 X-3947-398-1 3-065-933-01 1-677-049-11 1-680-434-11 3-065-877-01	A-7096-422-A BASE ASSY, DRUM 3-947-503-01 SCREW (M1.4) 3-065-928-01 SPACER, GROUND 3-065-927-01 GROUND, DRUM 3-065-932-01 PAN (2 MAIN M1.4X1.6), CAMERA  3-067-154-01 SPRING, CAPSTAN 3-065-931-01 RAIL (T2), GUIDE X-3947-398-1 SCREW ASSY, M1.7 PW 3-065-933-01 PAN (2 MAIN 1.4X4.5), CAMERA 1-677-049-11 FP-228 FLEXIBLE BOARD	A-7096-422-A BASE ASSY, DRUM 3-947-503-01 SCREW (M1.4) 3-065-928-01 SPACER, GROUND 3-065-927-01 GROUND, DRUM 3-065-932-01 PAN (2 MAIN M1.4X1.6), CAMERA  3-067-154-01 SPRING, CAPSTAN 3-065-931-01 RAIL (T2), GUIDE X-3947-398-1 SCREW ASSY, M1.7 PW 3-065-933-01 PAN (2 MAIN 1.4X4.5), CAMERA  3-067-154-01 SPRING, CAPSTAN 3-065-931-01 RAIL (T2), GUIDE 820 X-3947-398-1 SCREW ASSY, M1.7 PW 821 3-065-933-01 PAN (2 MAIN 1.4X4.5), CAMERA 822 1-677-049-11 FP-228 FLEXIBLE BOARD 823  1-680-434-11 FP-299 FLEXIBLE BOARD 824 3-065-877-01 PLATE (T), GUIDE LOCK	A-7096-422-A BASE ASSY, DRUM 3-947-503-01 SCREW (M1.4) 3-065-928-01 SPACER, GROUND 3-065-928-01 GROUND, DRUM 3-065-932-01 PAN (2 MAIN M1.4X1.6), CAMERA  3-067-154-01 SPRING, CAPSTAN 3-065-931-01 RAIL (T2), GUIDE X-3947-398-1 SCREW ASSY, M1.7 PW 3-065-933-01 PAN (2 MAIN 1.4X4.5), CAMERA  3-065-933-01 PAN (2 MAIN 1.4X4.5), CAMERA  3-065-933-01 PAN (2 MAIN 1.4X4.5), CAMERA  3-065-935-01 PAN (2 MAIN 1.4X4.5), CAMERA  3-065-935-01 PAN (2 MAIN 1.4X4.5), CAMERA  3-065-935-01 PAN (2 MAIN 1.4X4.5), CAMERA  3-065-905-01  1-680-434-11 FP-229 FLEXIBLE BOARD 3-065-877-01 PLATE (T), GUIDE LOCK  M902 8-835-701-01

## 6-1-11. MECHANICAL CHASSIS BLOCK ASSEMBLY-2



Ref. No.	Part No.	<u>Description</u>	Ref. No.	Part No.	<u>Description</u>
851	3-065-920-01	ARM, HC DRIVE	860	7-624-101-04	STOP RING 1.2 (E TYPE)
852	3-065-913-01	GEAR (4), LD	861	A-7096-412-A	GEAR (T) ASSY, GUIDE
853	3-065-914-01	SHEET, COVER	862	X-3951-307-1	PLATE ASSY, M SLIDE
854	3-065-917-01	GEAR (1), CAM RELAY	863	X-3951-305-1	ARM ASSY, LS
855	3-065-934-01	HLW CUT 0.98X3X0.25	864	3-065-901-01	ROLLER, LS ARM
856	3-065-915-01	GEAR (1), CAM	865	3-065-916-01	GEAR (2), CAM
857	3-065-878-01	PLATE (S), GUIDE LOCK	866	3-065-919-01	ARM, T1 LIMITTER
858	3-065-932-01	PAN (2 MAIN M1.4X1.6), CAMERA	867	X-3951-308-1	ARM ASSY, GL
859	A-7096-413-A	GEAR (S) ASSY, GUIDE	868	X-3951-300-2	CHASSIS ASSY, MECHANICAL

**CD-358** 

**LB-076** 

**PD-156** 

## 6-2. ELECTRICAL PARTS LIST

NOTE:

Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.

-XX, -X mean standardized parts, so they may have some difference from the original one.

Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

CAPACITORS:

COILS

RESISTORS

All resistors are in ohms. METAL: metal-film resistor

METAL OXIDE: Metal Oxide-film resistor

F: nonflammable

SEMICONDUCTORS

In each case, u:  $\mu$ , for example:  $uA...: \mu A..., uPA..., \mu PA...$ 

uPB... ,  $\mu PB...$  , uPC... ,  $\mu PC...$ 

uPD..., μPD...

Abbreviation

CND: Canadian model KR : Korea model

: Tourist model JE

: Australian model

: Hong Kong model HK

Part No. Ref. No. **Description** 

A-7078-049-A LB-076 BOARD, COMPLETE

CH

EE

NE

RU

AR

When indicating parts by reference number,

The components identified by mark  $\triangle$  or dotted line with mark  $\triangle$  are critical for safety.

Les composants identifiés par une marque

Ne les remplacer que par une pièce portant

: East European model

: North European model

Replace only with part number specified.

please include the board name.

: Chinese model

: Russian model

: Argentina model

le numéro spécifié.

< CAPACITOR >

C702 1-164-505-11 CERAMIC CHIP 2.2uF 16V

< CONNECTOR >

CN701 1-779-334-11 CONNECTOR, FFC/FPC 20P CN702 1-573-356-21 CONNECTOR, FFC/FPC 16P

< DIODE >

8-719-082-33 DIODE NSCW100-T38 D701 8-719-074-30 DIODE SML-310LTT86 D702

< IC >

IC701 8-759-581-11 IC NJM2125F(TE2)

< TRANSISTOR >

Q701 8-759-054-48 TRANSISTOR UP04601008S0 Q702 8-729-054-45 TRANSISTOR UP04312008S0

< RESISTOR >

1-218-883-11 METAL CHIP 0.5% 1/10W R701 33K R702 1-218-901-11 METAL CHIP 180K 0.5% 1/10W R703 1-216-827-11 METAL CHIP 3.3K 5% 1/16W R704 1-211-977-11 METAL CHIP 22 0.5% 1/10W 1-216-839-11 METAL CHIP R706 33K 5% 1/16W

> 1-218-867-11 RES-CHIP 6.8K 5% 1/10W

A-7078-096-A PD-156 (XC12)(SH) BOARD, COMPLETE (TRV738E/TRV740E:AEP,EE,NE,RU)

A-7078-152-A PD-156 (ZC12)(CA) BOARD, COMPLETE

(TRV840)

\*\*\*\*\*\*\*\*\*\*\*\*

< CAPACITOR >

C5501	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V
C5504	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5505	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5506	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5507	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V

uF: μF

uH: μH

Ref. No. Part No. Description A-7078-109-A CD-358 BOARD, COMPLETE (IC551 is not included in this complte board.) < CAPACITOR >

1-164-004-11 CERAMIC CHIP C551 10% 25V 0.1uF C553 1-107-826-11 CERAMIC CHIP 0.1uF 10% 16V C554 1-125-777-11 **CERAMIC CHIP** 0.1uF 10% 10V 1-125-777-11 CERAMIC CHIP C556 0.1uF 10% 10V 1-125-777-11 CERAMIC CHIP C557 0.1uF 10% 10V 1-125-777-11 **CERAMIC CHIP** C559 0.1uF 10% 10V C561 1-113-992-11 TANTAL, CHIP 3.3uF 20% 35V C562 1-104-851-11 TANTAL. CHIP 10uF 20% 10V C563 1-107-826-11 CERAMIC CHIP 0.1uF 10% 16V C564 1-107-826-11 CERAMIC CHIP 0.1uF 10% 16V TANTAL, CHIP C565 1-135-259-11 20% 6.3V 10uF 1-107-826-11 CERAMIC CHIP 10% 16V C567 0.1uF

< CONNECTOR >

0uH

CN551 1-779-336-11 CONNECTOR, FFC/FPC 24P

< FFRRITF RFAD > 1-414-445-11 FERRITE

< IC >

FB551

A-7012-228-A CCD BLOCK ASSY (CCD IMAGER) IC551 IC552 6-701-755-01 IC AD80017AJRURL

< COIL >

L551 1-469-528-91 INDUCTOR 100uH L552 1-469-525-91 INDUCTOR 10uH

< TRANSISTOR >

Q551 8-729-037-74 TRANSISTOR UN9213J-(TX).SO

< RESISTOR >

R552 1-218-990-11 SHORT 0 R553 1-218-990-11 SHORT 0

Be sure to read "Precautions upon replacing CCD imager" on page 4-7 when changing the CCD imager.

R707

PD-156

pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

R	ef. No.	Part No.	Description				Ref. No.	Part No.	Description			
110	C5509	1-110-457-11	•	3.3uF	20%	25V	IC5602		IC TA75S3	NOE TEOED		
	C5510		CERAMIC CHIP	0.01uF	10%	16V	IC5701		IC BU9735			
	C5511		CERAMIC CHIP	560PF	5%	50V	100701	0 100 010 02	10 000700	N LL		
	C5512		CERAMIC CHIP	0.1uF	10%	10V			< COIL >			
	C5513	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V						
							L5501	1-469-527-91		47uH		
	C5514	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	L5502	1-469-525-91		10uH (TI	RV840)	
	C5515 C5516	1-162-964-11	CERAMIC CHIP CERAMIC CHIP	0.001uF 68PF	10% 5%	50V 50V	L5503	1-412-949-21	INDUCTOR	6.8uH	/7.40E+4.E	DEE NE DIIV
	63316	1-104-070-11		оогг /738E/TRV7			L5503	1-412-950-11	INDUCTOR	(TRV738E/TRV 8.2uH (T		P,EE,INE,NU)
	C5516	1-164-872-11	,	82PF	5%	50V	L5601	1-419-387-11	INDUCTOR	100uH	111040)	
	000.0		02.11.11.10	02	0,0	(TRV840)						
	C5517	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	L5602	1-412-056-11	INDUCTOR	4.7uH		
	05540	4 407 000 44	0504440 01110	0.4 5	100/	10) (			TD 4 N 0 1 0 T	-0.5		
	C5518 C5519		CERAMIC CHIP CERAMIC CHIP	0.1uF 0.1uF	10% 10%	16V 16V			< TRANSIST	UR >		
	C5520	1-107-626-11		10uF	20%	16V 16V	Q5502	8-729-041-23	TRANSISTO	R MGSF1P	02LT1	
	C5521		CERAMIC CHIP	1uF	10%	16V	Q3302	0-723-041-23	IIIANOIOIO	(TRV738E/TRV		P.F.F.N.F.RU)
	C5524		CERAMIC CHIP	1uF	10%	16V	Q5503	8-759-054-48	TRANSISTO	,		.,,,
										(TRV738E/TRV	/740E:AE	P,EE,NE,RU)
	C5527	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	Q5504	8-759-054-48	TRANSISTO			
	C5528	1-135-177-21	TANTALUM CHIP		20%	20V				(TRV738E/TRV		P,EE,NE,RU)
	05500	1 104 040 11	,	738E/TRV7		,	Q5505	8-729-052-64	TRANSISTO			DEE NE DUI
	C5530	1-164-943-11		0.01uF /738E/TRV7	10% 40E:AED	16V	Q5601	8-729-052-64	TDANGICTO	(TRV738E/TRV R DTC144E		P,EE,NE,RU)
	C5531	1-164-943-11	`	0.01uF	40E.AEF,	16V	Q3001	0-729-002-04	INAINSISTU	n DIC1440	INIZL	
	00001	1 104 540 11		738E/TRV7			Q5604	6-550-065-01	TRANSISTO	R CPH5504	4-TL-E	
	C5603	1-164-657-11	CERAMIC CHIP	0.015uF	10%	50V						
									< RESISTOF	? >		
	C5604		CERAMIC CHIP	0.1uF	10%	10V						
	C5605		CERAMIC CHIP	0.1uF	10%	10V	R5501	1-218-985-11		470K	5%	1/16W
<u>∠!\</u>	C5606 C5607		CERAMIC CHIP CERAMIC CHIP	12PF 4.7uF	10% 10%	3KV 10V	R5503 R5505	1-208-933-11 1-218-967-11		P 82K 15K	0.5% 5%	1/16W 1/16W
	C5701		CERAMIC CHIP	4.7 uF 0.1uF	10%	10V 10V	R5506	1-218-958-11		2.7K	5%	1/16W
	03701	1 120 111 11	OLITAWIO OTIII	0.141	10 /0	100	R5507	1-218-973-11		47K	5%	1/16W
			< CONNECTOR >				1.0007				• , ,	.,
							R5508	1-218-975-11		68K	5%	1/16W
		1-815-031-11	CONNECTOR, FFC				R5509	1-218-969-11		22K	5%	1/16W
*		1-573-984-11	CONNECTOR, BO		ARD 10P		R5510	1-218-975-11		68K	5%	1/16W
		1-764-709-11 1-794-998-31	CONNECTOR, FFO				R5511 R5512	1-218-989-11 1-218-977-11		1M 100K	5% 5%	1/16W 1/16W
			CONNECTOR, FFO		6P		N0012	1-210-977-11	NEO-UNIP	TUUK	370	1/1000
	0110702	1 010 170 11	OOMINEOTOTI, TT	//11 O (ZII)	OI .		R5513	1-218-989-11	RES-CHIP	1M	5%	1/16W
	CN5703	1-816-178-11	CONNECTOR, FFO	C/FPC (ZIF)	20P					(TRV738E/TRV		
	CN5704	1-778-508-21	PIN, CONNECTOR		D) 6P		R5514	1-218-990-11	SHORT	0 (TRV8	40)	
	CN5705	1-766-759-11	CONNECTOR, FFO	C/FPC 4P			R5515	1-218-990-11	SHORT	0		
			. DIODE .				DEE10	1 010 000 11	DEC CUID	(TRV738E/TRV		
			< DIODE >				R5516	1-218-962-11	KES-CHIP	5.6K (TRV738E/TRV	5% /7∧0E∙∆E	1/16W
	D5502	8-719-084-47	DIODE 1SV290(	TPI 3)			R5516	1-218-965-11	RES-CHIP	10K	5%	1/16W
	D5503	8-719-988-61	DIODE 1SS355T				110010	1 210 000 11	1120 01111	7010	0,70	(TRV840)
	-			/738E/TRV7	'40E:AEP,	EE,NE,RU)						/
	D5601	8-719-988-61	DIODE 1SS355T	E-17			R5517	1-218-978-11	RES-CHIP	120K	5%	1/16W
										- /		(TRV840)
			< FERRITE BEAD	>			R5518	1-218-990-11		0 (TRV8	40)	
	FR5501	1-414-760-21	FERRITE	0uH			R5519	1-218-990-11	SHORT	0 (TRV738E/TRV	/7/0E·AE	DEE NE RII)
		1-414-760-21	FERRITE	0uH			R5520	1-218-990-11	SHORT	0 (TRV8		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
		1-414-760-21		0uH			R5521	1-218-973-11		47K	5%	1/16W
			(TRV	738E/TRV7	'40E:AEP,	EE,NE,RU)						
							R5522	1-218-963-11	RES-CHIP	6.8K	5%	1/16W
			< IC >								==.	(TRV840)
	105504	0 750 100 40	IC CVASEOOD T	1			R5522	1-218-957-11	RES-CHIP	2.2K	5% /740E:AE	1/16W
	IC5501	o-/52-102-40	IC CXA3592R-T4	1 /738E/TRV7	′/UE·√ED	EE NE DIIV	R5523	1-218-990-11	SHORT	(TRV738E/TRV 0	1/4UE:AE	r,ee,Ne,KU)
	IC5501	8-759-660-92	IC RB5P003AM1		HUE.AEP,	LE,NE,NU)	R5525	1-218-990-11		0 (TRV8	40)	
	IC5502	8-759-714-77		. (11170 <del>1</del> 0)			R5528	1-218-990-11		0 (TRV8		
				738E/TRV7	'40E:AEP,	EE,NE,RU)			- ****	- (0	-,	
	IC5502	8-759-833-18	IC CM7021L3-E	2 (TRV840)		,		Note:		Note :		
	IC5601	8-759-564-49	IC TC7W53FU(T	E12R)				Note: The components	identified by		sants ide	entifiés par
								$\operatorname{mark} \stackrel{\cdot}{ \triangle} \operatorname{or} \operatorname{dotted}$	line with mark	une marqu	e \land son	
									safety.	pour la séci	urité.	

 $\ensuremath{\Delta}$  are critical for safety. Replace only with part number

specified.

PD-156

PD-160

Ref. No.	Part No.	<u>Description</u>				Ref. No.	Part No.	<u>Description</u>			
R5529	1-218-990-11	SHORT	0 (TRV840	0)		C5516	1-164-872-11	CERAMIC CHIP	82PF	5%	50V
R5530	1-218-990-11	SHORT	0 (TRV840			00010	1 101 012 11		740/TRV740		
R5531	1-218-980-11	RES-CHIP	180K	5%	1/16W	C5516	1-164-874-11	,	100PF	5%	50V
		(	TRV738E/TRV7	740E:AEP	P,EE,NE,RU)						(TRV840)
R5532	1-218-977-11	RES-CHIP	100K	5%	1/16W	C5517	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
			TRV738E/TRV7	740E:AEP	(EE,NE,RU)	C5518	1-109-982-11		1uF	10%	10V
R5533	1-218-989-11		1M	5%	1/16W	C5519	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
		(	TRV738E/TRV7	740E:AEP	P,EE,NE,RU)						
D==0.4	1 010 000 11	OLIOPT				C5532	1-109-982-11		1uF	10%	10V
R5534	1-218-990-11		0	F0/	4 (4 0) 11	C5533	1-115-566-11		4.7uF	10%	10V
R5540	1-218-977-11	RES-CHIP	100K	5%	1/16W	C5534	1-109-982-11		1uF	10%	10V
DEE 44	1 010 077 11		TRV738E/TRV7		,	C5536		CERAMIC CHIP	0.1uF	10%	10V
R5541	1-218-977-11	RES-CHIP	100K TRV738E/TRV7	5% 740E:AED	1/16W	C5538	1-104-943-11	CERAMIC CHIP	0.01uF	10%	16V
R5601	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	C5540	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
R5602	1-218-977-11	RES-CHIP	1.0K	5%	1/16W	C5602	1-115-566-11		4.7uF	10%	10V 10V
113002	1 210 377 11	TILO OTTI	TOOK	3 /0	1/1000	C5604		CERAMIC CHIP	0.015uF	10%	50V
R5603	1-218-966-11	RES-CHIP	12K	5%	1/16W	C5605		CERAMIC CHIP	0.015u1 0.1uF	10%	10V
R5606	1-218-969-11	RES-CHIP	22K	5%	1/16W	C5606		CERAMIC CHIP	0.1uF	10%	10V
R5607	1-218-949-11	RES-CHIP	470	5%	1/16W	00000	1 120 111 11	OLI WINIO OTHI	0.141	1070	
R5612	1-218-965-11	RES-CHIP	10K	5%	1/16W	<b>△</b> C5607	1-131-959-91	CERAMIC CHIP	12PF	10%	3KV
R5613		RES-CHIP	10K	5%	1/16W	C5701		CERAMIC CHIP	0.1uF	10%	10V
		(	TRV738E/TRV7	740E:AEP	P,EE,NE,RU)						
					,			< CONNECTOR >			
R5613	1-218-968-11	RES-CHIP	18K	5%	1/16W						
					(TRV840)		1-815-031-11	,	- ( )		
R5704	1-218-987-11	RES-CHIP	680K	5%	1/16W		2 1-573-984-11	,		ARD 10F	)
							1-764-709-11	,			
		< COMPOSIT	ION CIRCUIT BI	LOCK >			1-794-998-31				
						CN5702	2 1-816-176-11	CONNECTOR, FF	C/FPC (ZIF)	6P	
	1-234-372-21	RES, NETWO		(1005)		011570		0011150700 55	0/EDO (71E)	000	
KB5502	1-234-384-11	RES, NETWO		(1005)	VEE NE DUI		3 1-816-178-11				
DDEEOO	1-234-378-21		TRV738E/TRV7		,		1-778-508-21 1-766-759-11	*		ס) אס	
ndoous	1-234-370-21	RES, NETWO	nk tuka4 TRV738E/TRV7	(1005) 740E:AED		UN370	) 1-700-739-11	CONNECTOR, FF	J/FPU 4P		
		'	TITO / GOL/ TITO /	HUL.ALI	,LL,IVL,ITO)			< DIODE >			
		< TRANSFOR	MER >					( DIODE >			
						D5502	8-719-084-47	DIODE 1SV290(	TPL3)		
<b></b> ∆ T5601	1-435-785-11	TRANSFORM	ER, INVERTER	(TRV840	)	D5503	8-719-050-42	DIODE RD3.3U	И-T1В		
<b> ∆</b> T5601	1-435-227-11	TRANSFORM	ER, INVERTER			D5601	8-719-988-61	DIODE 1SS355	TE-17		
		(	TRV738E/TRV7	740E:AEP	(EE,NE,RU)						
								< FERRITE BEAD	>		
	A 7070 050 A	DD 400 (V0)	00) 00400 00	ONADI ETE	_	FDFF00	4 44 4 700 04	FEDRITE	0.11		
	A-7078-052-A						1-414-760-21		0uH		
		,	`RV740/TRV740 *******	, ,	,	FB0004	1-414-760-21	FERRITE	0uH		
	A-7078-145-A							< IC >			
	7, 7070 110 7	100 (201)	-)(00) Boruib,	OOM L	(TRV840)			(10)			
		*****	******	******	` '	IC5501	8-752-100-95	IC CXA3289AR-	T4		
						IC5502					
		< CAPACITOR	l >					(TRV	740/TRV740	E:E,HK,A	AUS,CH,JE)
						IC5502	8-752-409-15	IC CXD3516R-T	4 (TRV840)		
C5501	1-127-760-11	CERAMIC CH	IP 4.7uF	10%	6.3V	IC5601		IC TC7W53FU(T			
C5504	1-164-943-11	CERAMIC CH		10%	16V	IC5602	8-759-075-70	IC TA75S393F-1	E85R		
C5505	1-164-943-11	CERAMIC CH		10%	16V						
C5506	1-164-943-11	CERAMIC CH		10%	16V	IC5701	8-759-573-02	IC BU9735K-E2			
C5507	1-164-943-11	CERAMIC CH	IP 0.01uF	10%	16V			4 COII -			
CEEOO	1 110 457 14	ELECT CLUD	9 9 <sub>11</sub> F	200/	251/			< COIL >			
C5509 C5510	1-110-457-11	ELECT CHIP	3.3uF	20%	25V 16V	I EEO4	1 460 507 04	INDUICTOR	47L		
C5510	1-164-943-11 1-164-739-11	CERAMIC CH		10% 5%	50V	L5501 L5505	1-469-527-91 1-412-949-21		47uH 6.8uH (TR	\/8//0\	
C5511	1-104-739-11	CERAMIC CH		10%	10V	L5505	1-412-949-21		27uH	v 0 <del>-1</del> 0)	
C5515	1-162-964-11			10%	50V		1 112 330-21		740/TRV740	F:F HK 4	AUS CH JEY
55010	. 102 001 11	CEI II IIVIIO OII	0.00141	. 5 /6		L5601	1-419-387-21		100uH	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	,,
						L5602	1-412-056-11		4.7uH		

#### Note:

The components identified by mark A or dotted line with mark ⚠ are critical for safety.

Replace only with part number specified.

#### Note:

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

**PD-160** 

**SI-032** 

Carrier   Car	Ref. No.	Part No.	ef. No.	<u>Description</u>				Ref. No.	Part No.	<u>Description</u>			
Second   S-729-052-65   TRANSISTOR   DESCRIPTION				< TRANSISTOR >					A-7078-047-A				
OSS906   8-759-952-64   TRAMSISTOR   DP460F0008S0   C310   1-107-32E-11   CERAMIC CHIP   0.1 br   10%   16V   C311   1-107-32E-11   TANTAL CHIP   22br   20%   4V   C315   1-104-347-11   TANTAL CHIP   22br   20%   4V   C316   1-104-347-11   TANTAL CHIP   22br   20%   4V   C316   1-104-347-11   TANTAL CHIP   22br   20%   4V   C316   1-104-347-11   TANTAL CHIP   22br   20%   4V   C316   1-104-347-11   TANTAL CHIP   22br   20%   4V   C316   1-104-347-11   TANTAL CHIP   22br   20%   4V   C316   1-104-347-11   TANTAL CHIP   22br   20%   4V   C316   1-104-347-11   TANTAL CHIP   22br   20%   4V   C316   1-104-347-11   TANTAL CHIP   22br   20%   4V   C316   1-104-347-11   TANTAL CHIP   20br   25br   C316   1-104-347-11   TANTAL CHIP   20br   25br   C316   1-104-347-11   TANTAL CHIP   20br   25br   C316   1-104-347-11   TANTAL CHIP   20br   20br   25br   C316   1-104-347-11   TANTAL CHIP   20br   20b	Q5504	8-729-052-65	Q5504	TRANSISTOR	2SA1774H	IT2L				< CAPACITOR >			
C310								C305	1-107-826-11	CERAMIC CHIP	O 1uE	10%	16\/
Color													
C5000   C500-083-01   TRANSISTOR   TPOCCOT (TEST)   CTRY-VADEE HK, AUS, CH, JE)   C715   C715-08-11   C715-								C311			22uF		
TRANSITOR   CPH5504-TL-E													
C315	U0002	6-550-063-01	Q5002		,	,	US CH.JF)	6314	1-102-909-11	CERAIVIIC CHIP	0.0068uF	10%	20 V
R5501   1-218-985-11   RES-CHIP   47DK   5%   1/16W   CR302   1-816-232-11   CONNECTOR, FFC/FPC 18P   CR303   1-208-933-11   METAL CHIP   100K   0.5%   1/16W   CR304   1-779-339-21   CONNECTOR, FFC/FPC 30P   CONNECTOR,	Q5604	6-550-065-01	Q5604				.00,01.,02)	C315	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
R5503   1-208-933-11   METAL CHIP   82K   0.5%   1/16W   CN302   1-816-232-11   PIN. CONNECTOR (PC BOARD) 4P   CN304   1-779-339-21   C				< RESISTOR >						< CONNECTOR >			
R5503   1-208-935-11   METAL CHIP   100K   0.5%   1/16W   1/													
R5506							(TRV840)					D) 4P	
RES-06    2-218-958-11   RES-CHIP   2.7K   5%   1/16W   D301   8-719-067-44   D10DE   CL-310IRS-X-TU   D302   8-719-067-44   D10DE   CL-310IRS-X-TU   D302   8-719-067-44   D10DE   CL-310IRS-X-TU   D302   8-719-067-44   D10DE   CL-310IRS-X-TU   D303   8-719-067-44   D10DE   CL-310IRS-X-TU   D303   RES-07-17   RES-CHIP   C2K   5%   1/16W   D303   RES-07-17   RES-CHIP   C3K   S%   1/16W   D304   RES-07-17   RES-CHIP   C3K   S%   1/16W   D304   RES-07-17   RES-CHIP   D10K   5%   1/16W   D309   RES-07-16   D10DE   D12A8.2(TPL3)   D301   RES-07-17   RES-07	R5503	1-208-935-11	R5503							< DIODE >			
R5508   1-218-975-11   RES-CHIP   68K   5%   1/16W   D304   8-719-062-16   D10DE   D12A8.2(TPL3)   D304   8-719-062-16   D10DE   D12A8.2(TPL3)   D304   8-719-062-16   D10DE   D12A8.2(TPL3)   D304   8-719-062-16   D10DE   D12A8.2(TPL3)   D304   8-719-062-16   D10DE   D12A8.2(TPL3)   D304   8-719-062-16   D10DE   D12A8.2(TPL3)   D304   8-719-062-16   D10DE   D12A8.2(TPL3)   D304   R5511   1-218-995-11   RES-CHIP   D10K   5%   1/16W   D309   8-719-062-16   D10DE   D12A8.2(TPL3)   D304   R579-062-16   D10DE   D12A8.2(TPL3)   D304	R5506	1-218-958-11	R5506							( DIODE >			
R5508   1-218-975-11   RES-CHIP   68K   5%   1/16W   D304   8-719-056-216   DIODE	R5507	1-218-973-11	R5507	RES-CHIP	47K	5%	1/16W				-		
R5509   1-218-969-11   RES-CHIP   22K   5%   1/16W   D306   8-719-056-85   DIODE   DZSTE-178.2B   R5510   1-218-987-11   RES-CHIP   100K   5%   1/16W   D306   8-719-062-16   DIODE   SML-310LT186   R5512   1-218-987-11   RES-CHIP   100K   5%   1/16W   D309   8-719-062-16   DIODE   SML-310LT186   R5522   1-218-969-11   RES-CHIP   22K   5%   1/16W   D309   8-719-062-16   DIODE   OTZA8.2(TPL3)   DIODE   DIZA8.2(TPL3)   DIODE   DIZA8.2(T	DEEOO	1 010 075 11	DEEOO	DEC CHID	COV	E0/	1/16///						
R5510   1-218-975-11   RES-CHIP   10   5%   1/16W   1/16W   R5511   1-218-987-11   RES-CHIP   100K   5%   1/16W   D309   8-719-062-16   DIODE   SML-310LTT86   SML-321LT86													
R5511													
R5522   1-218-969-11   RES-CHIP   22K   5%   1/16W   (TRV740/TRV740/EE,HK,AUS,CH,JE)   R5522   1-218-973-11   RES-CHIP   47K   5%   1/16W   (TRV840)   FB301   1-414-760-21   FERRITE   0UH   FB302   1-414-760-21   FERRITE   OUH   FB302   1-414-760-21								2000	0	2.022 02 0			
R5522   1-218-973-11   RES-CHIP   47K   5%   1/16W   FB301   1-414-760-21   FERRITE BEAD >   FB301   1-414-760-21   FERRITE   0uh   FB302   1-414-760-21   FERRITE   0uh   F	R5512	1-218-977-11	R5512	RES-CHIP	100K	5%	1/16W						
R5522   1-218-973-11   RES-CHIP   47K   5%   1/16W   (TRV840)   FB301   1-414-760-21   FERRITE   0UH   FB302   1-218-965-11   RES-CHIP   10K   5%   1/16W   FB302   1-414-760-21   FERRITE   0UH   FF302	R5522	1-218-969-11	R5522										
R5551   1-218-973-11   RES-CHIP   47K   5%   1/16W   FB302   1-414-760-21   FERRITE   0uh   FB	R5522	1-218-073-11	R5522							< FERRITE BEAD	>		
R5551   1-218-963-11   RES-CHIP   47K   5%   1/16W   R5572   1-218-965-11   RES-CHIP   10K   5%   1/16W	110022	1-210-373-11	110022	ILO-OIIII	7/10	J /0		FB301	1-414-760-21	FERRITE	0uH		
R5572   1-218-965-11   RES-CHIP   10K   5%   1/16W	R5551	1-218-973-11	R5551	RES-CHIP	47K	5%							
R5574   1-208-957-11   RES-CHIP   820K   5%   1/16W   R5575   1-218-975-11   RES-CHIP   68K   5%   1/16W   R5576   1-218-989-11   RES-CHIP   1M   5%   1/16W   R5577   1-218-989-11   RES-CHIP   470K   5%   1/16W   R5579   1-218-979-11   RES-CHIP   150K   5%   1/16W   R5579   1-218-90-11   RES-CHIP   150K   5%   1/16W   R5610   1-218-965-11   RES-CHIP   10K   5%   1/16W   R5611   1-218-980-11   RES-CHIP   180K   5%   1/16W   R307   1-216-810-11   METAL CHIP   120   5%   1/16W   R307   1-216-864-11   METAL CHIP   120   5%   1/16W   R307   1-216-864-11   METAL CHIP   0   5%   1/16W   R307   1-216-864-11   METAL CHIP   470   5%   1/16W   R316   1-216-817-11   METAL CHIP   470   5%   1/16W   R319   1-216-019-00   METAL CHIP   56   5%   1/10W   R319   1-216-019-00   METAL CHIP   56   5%   1/10W   R320   1-218-969-11   RES-CHIP   18K   5%   1/16W   R320   1-216-019-00   METAL CHIP   56   5%   1/10W   R320   1-218-949-11   RES-CHIP   22K   5%   1/16W   R320   1-216-019-00   METAL CHIP   56   5%   1/10W   R320   1-218-949-11   RES-CHIP   18K   5%   1/16W   R320   1-216-019-00   METAL CHIP   56   5%   1/10W   R320   1-218-949-11   RES-CHIP   470   5%   1/16W   R320   1-216-019-00   METAL CHIP   56   5%   1/10W   R320   1-218-949-11   RES-CHIP   470   5%   1/16W   R320   1-216-019-00   METAL CHIP   56   5%   1/10W   R320   1-218-949-11   RES-CHIP   470   5%   1/16W   R320   1-216-019-00   METAL CHIP   56   5%   1/10W   R320   1-218-949-11   RES-CHIP   470   5%   1/16W   R320   1-216-019-00   METAL CHIP   56   5%   1/10W   R320   1-218-949-11   RES-CHIP   470   5%   1/16W   R320   1-218-949-11   RES-CHIP   470   5%   1/16W   R320   1-218-949-11   RES-CHIP   470   5%   1/16W   R320   1-218-949-11   RES-CHIP   470   5%   1/16W   R320   1-218-949-11   RES-CHIP   470   5%   1/16W   R320   1-218-949-11   RES-CHIP   470   5%   1/16W   R320   1-218-949-11   RES-CHIP   470   5%   1/16W   R320   1-218-949-11   RES-CHIP   470   5%   1/16W   R320   1-218-949-11   RES-CHIP   470   5%   1/16W   R320   1-218-949-11   RES-CHIP   470   5													
R5575 1-218-975-11 RES-CHIP 68K 5% 1/16W R5576 1-218-989-11 RES-CHIP 1M 5% 1/16W R5577 1-218-985-11 RES-CHIP 470K 5% 1/16W R5579 1-218-979-11 RES-CHIP 150K 5% 1/16W R5579 1-218-979-11 RES-CHIP 150K 5% 1/16W R5609 1-218-965-11 RES-CHIP 10K 5% 1/16W R5610 1-216-055-00 METAL CHIP 1.8K 5% 1/16W R5611 1-218-980-11 RES-CHIP 180K 5% 1/16W R5612 1-218-969-11 RES-CHIP 22K 5% 1/16W R307 1-216-810-11 METAL CHIP 120 5% 1/16W R316 1-216-817-11 METAL CHIP 470 5% 1/16W R316 1-216-019-00 METAL CHIP 56 5% 1/10W R320 1-216-019-00 METAL CHIP 56 5% 1/10W R320 1-216-019-00 METAL CHIP 56 5% 1/10W R320 1-216-019-00 METAL CHIP 56 5% 1/10W R320 1-218-969-11 RES-CHIP 18K 5% 1/16W R320 1-216-019-00 METAL CHIP 56 5% 1/10W R320 1-218-969-11 RES-CHIP 18K 5% 1/16W R320 1-216-019-00 METAL CHIP 56 5% 1/10W R320 1-218-969-11 RES-CHIP 18K 5% 1/16W R320 1-216-019-00 METAL CHIP 56 5% 1/10W R320 1-218-969-11 RES-CHIP 18K 5% 1/16W R320 1-218-949-11 RES-CHIP 470 5% 1/16W R320 1-218-949-11 RES-CHIP 470 5% 1/16W R320 1-218-949-11 RES-CHIP 470 5% 1/16W R320 1-218-949-11 RES-CHIP 470 5% 1/16W R320 1-218-949-11 RES-CHIP 470 5% 1/16W R320 1-218-949-11 RES-CHIP 470 5% 1/16W R320 1-218-949-11 RES-CHIP 470 5% 1/16W R320 1-218-949-11 RES-CHIP 470 5% 1/16W R320 1-218-949-11 RES-CHIP 470 5% 1/16W R320 1-218-949-11 RES-CHIP 470 5% 1/16W R320 1-218-949-11 RES-CHIP 470 5% 1/16W R320 1-218-949-11 RES-CHIP 470 5% 1/16W R320 1-28-949-11 RES-CHIP 470 5% 1/16W R320 1-28-949-11 RES-CHIP 470 5% 1/16W R320 1-803-042-31 SENSOR, ANGULAR VELOCITY (PITCH) (SERVICE) R5704 1-218-949-11 RES-CHIP 470 5% 1/16W R320 1-803-042-41 SENSOR, ANGULAR VELOCITY (YAW) (SERVICE)	R5573	1-218-965-11	R5573	RES-CHIP	10K	5%	1/16W			< IC >			
R5575 1-218-975-11 RES-CHIP 68K 5% 1/16W R5576 1-218-989-11 RES-CHIP 1M 5% 1/16W R5577 1-218-985-11 RES-CHIP 470K 5% 1/16W R5579 1-218-979-11 RES-CHIP 150K 5% 1/16W R5579 1-218-979-11 RES-CHIP 150K 5% 1/16W R5609 1-218-965-11 RES-CHIP 10K 5% 1/16W R5610 1-216-055-00 METAL CHIP 1.8K 5% 1/16W R5611 1-218-980-11 RES-CHIP 180K 5% 1/16W R5612 1-218-969-11 RES-CHIP 22K 5% 1/16W R307 1-216-810-11 METAL CHIP 120 5% 1/16W R316 1-216-817-11 METAL CHIP 470 5% 1/16W R316 1-216-019-00 METAL CHIP 56 5% 1/10W R320 1-216-019-00 METAL CHIP 56 5% 1/10W R320 1-216-019-00 METAL CHIP 56 5% 1/10W R320 1-216-019-00 METAL CHIP 56 5% 1/10W R320 1-218-969-11 RES-CHIP 18K 5% 1/16W R320 1-216-019-00 METAL CHIP 56 5% 1/10W R320 1-218-969-11 RES-CHIP 18K 5% 1/16W R320 1-216-019-00 METAL CHIP 56 5% 1/10W R320 1-218-969-11 RES-CHIP 18K 5% 1/16W R320 1-216-019-00 METAL CHIP 56 5% 1/10W R320 1-218-969-11 RES-CHIP 18K 5% 1/16W R320 1-218-949-11 RES-CHIP 470 5% 1/16W R320 1-218-949-11 RES-CHIP 470 5% 1/16W R320 1-218-949-11 RES-CHIP 470 5% 1/16W R320 1-218-949-11 RES-CHIP 470 5% 1/16W R320 1-218-949-11 RES-CHIP 470 5% 1/16W R320 1-218-949-11 RES-CHIP 470 5% 1/16W R320 1-218-949-11 RES-CHIP 470 5% 1/16W R320 1-218-949-11 RES-CHIP 470 5% 1/16W R320 1-218-949-11 RES-CHIP 470 5% 1/16W R320 1-218-949-11 RES-CHIP 470 5% 1/16W R320 1-218-949-11 RES-CHIP 470 5% 1/16W R320 1-218-949-11 RES-CHIP 470 5% 1/16W R320 1-28-949-11 RES-CHIP 470 5% 1/16W R320 1-28-949-11 RES-CHIP 470 5% 1/16W R320 1-803-042-31 SENSOR, ANGULAR VELOCITY (PITCH) (SERVICE) R5704 1-218-949-11 RES-CHIP 470 5% 1/16W R320 1-803-042-41 SENSOR, ANGULAR VELOCITY (YAW) (SERVICE)	R5574	1-208-957-11	R5574	RES-CHIP	820K	5%	1/16W	IC301	6-701-681-01	IC NJL61H400A			
R5577   1-218-985-11   RES-CHIP   470K   5%   1/16W   R5579   1-218-979-11   RES-CHIP   150K   5%   1/16W   R5590   1-218-990-11   SHORT   0													
R5579   1-218-979-11   RES-CHIP   150K   5%   1/16W   Q301   8-729-141-73   TRANSISTOR   2SD1938(F)-S(TX).SO	R5576	1-218-989-11	R5576	RES-CHIP	1M	5%	1/16W			< TRANSISTOR >			
R5590 1-218-990-11 SHORT 0 R5609 1-218-965-11 RES-CHIP 10K 5% 1/16W R5610 1-216-055-00 METAL CHIP 1.8K 5% 1/10W R5611 1-218-980-11 RES-CHIP 180K 5% 1/16W R5612 1-218-969-11 RES-CHIP 22K 5% 1/16W R5614 1-218-965-11 RES-CHIP 10K 5% 1/16W R5614 1-218-965-11 RES-CHIP 10K 5% 1/16W R5615 1-218-968-11 RES-CHIP 10K 5% 1/16W R5616 1-218-968-11 RES-CHIP 10K 5% 1/16W R5617 1-218-968-11 RES-CHIP 22K 5% 1/16W R5618 1-218-949-11 RES-CHIP 22K 5% 1/16W R5618 1-218-949-11 RES-CHIP 470 5% 1/16W R5619 1-218-968-11 RES-CHIP 22K 5% 1/16W R5610 1-218-968-11 RES-CHIP 10K 5% 1/16W R5611 1-218-968-11 RES-CHIP 10K 5% 1/16W R5612 1-218-968-11 RES-CHIP 10K 5% 1/16W R5613 1-218-968-11 RES-CHIP 10K 5% 1/16W R5614 1-218-968-11 RES-CHIP 10K 5% 1/16W R5615 1-218-968-11 RES-CHIP 10K 5% 1/16W R5616 1-218-968-11 RES-CHIP 22K 5% 1/16W R5617 1-218-968-11 RES-CHIP 22K 5% 1/16W R5618 1-218-968-11 RES-CHIP 470 5% 1/16W R5618 1-218-949-11 RES-CHIP 470 5% 1/16W R5618 1-218-987-11 RES-CHIP 470 5% 1/16W R5618 1-218-980-11 RES-CHIP 10K 5% 1/16W R5618	R5577	1-218-985-11	R5577	RES-CHIP	470K	5%	1/16W						
R5609 1-218-965-11 RES-CHIP 10K 5% 1/16W R5610 1-216-055-00 METAL CHIP 1.8K 5% 1/10W R5611 1-218-980-11 RES-CHIP 180K 5% 1/16W R5612 1-218-969-11 RES-CHIP 22K 5% 1/16W R5614 1-218-965-11 RES-CHIP 10K 5% 1/16W R5614 1-218-968-11 RES-CHIP 10K 5% 1/16W R5615 1-218-969-11 RES-CHIP 10K 5% 1/16W R5616 1-218-969-11 RES-CHIP 10K 5% 1/16W R5617 1-218-969-11 RES-CHIP 22K 5% 1/16W R5618 1-218-949-11 RES-CHIP 470 5% 1/16W R5618 1-218-987-11 RES-CHIP 470 5% 1/16W R5619 1-218-987-11 RES-CHIP 470 5% 1/16W R5610 1-218-987-11 RES-CHIP 470 5% 1/16W R5611 1-218-987-11 RES-CHIP 470 5% 1/16W R5612 1-218-987-11 RES-CHIP 470 5% 1/16W R5613 1-218-987-11 RES-CHIP 470 5% 1/16W R5614 1-218-987-11 RES-CHIP 470 5% 1/16W R5615 1-218-987-11 RES-CHIP 470 5% 1/16W R5616 1-218-987-11 RES-CHIP 470 5% 1/16W R5617 1-218-987-11 RES-CHIP 470 5% 1/16W R5618 1-218-987-11 RES-CHIP 470 5% 1/16W R5619 1-218-987-11 RES-CHIP 470 5% 1/16W R5619 1-218-987-11 RES-CHIP 470 5% 1/16W R5610 1-218-987-11 RES-CHIP 470 5% 1/16W R5610 1-218-987-11 RES-CHIP 470 5% 1/16W R5610 1-218-987-11 RES-CHIP 470 5% 1/16W R5610 1-218-987-11 RES-CHIP 470 5% 1/16W R5610 1-218-987-11 RES-CHIP 470 5% 1/16W R5610 1-218-987-11 RES-CHIP 470 5% 1/16W R5610 1-218-987-11 RES-CHIP 470 5% 1/16W R5610 1-218-987-11 RES-CHIP 470 5% 1/16W R5610 1-218-987-11 RES-CHIP 470 5% 1/16W R5610 1-218-987-11 RES-CHIP 470 5% 1/16W R5610 1-218-987-11 RES-CHIP 470 5% 1/16W R5610 1-218-987-11 RES-CHIP 470 5% 1/16W R5610 1-218-987-11 RES-CHIP 56 5% 1/10W R5610 1-218-987-11 RES-CHIP 56 5% 1/10W R5610 1-218-987-11 RES-CHIP 56 5% 1/10W R5610 1-218-987-11 RES-CHIP 56 5% 1/10W R5610 1-216-810-11 METAL CHIP 120 5% 1/16W R510 1-216-810-11 METAL CHIP 120 5% 1/16W R510 1-216-810-11 METAL CHIP 120 5% 1/16W R510 1-216-810-11 METAL CHIP 120 5% 1/16W R510 1-216-810-11 METAL CHIP 120 5% 1/16W R510 1-216-810-11 METAL CHIP 120 5% 1/16W R510 1-216-810-11 METAL CHIP 120 5% 1/16W R510 1-216-810-11 METAL CHIP 120 5% 1/16W R510 1-216-810-11 METAL CHIP 120 5% 1/16W R510 1-216-810-11 METAL CHIP 120 5% 1/16W R510 1-216-810-11 METAL CH	R5579	1-218-979-11	R5579	RES-CHIP	150K	5%	1/16W	Q301	8-729-141-73	TRANSISTOR	2SD1938(	F)-S(TX)	.S0
R5610 1-216-055-00 METAL CHIP 1.8K 5% 1/10W R5611 1-218-980-11 RES-CHIP 180K 5% 1/16W R5612 1-218-969-11 RES-CHIP 22K 5% 1/16W R307 1-216-864-11 METAL CHIP 0 5% 1/16W R319 1-216-019-00 METAL CHIP 470 5% 1/16W R319 1-216-019-00 METAL CHIP 56 5% 1/10W R319 1-216-019-00 METAL CHIP 56 5% 1/10W R319 1-216-019-00 METAL CHIP 56 5% 1/10W R319 1-216-019-00 METAL CHIP 56 5% 1/10W R319 1-216-019-00 METAL CHIP 56 5% 1/10W R320 1-216-019-00 METAL CHIP 56 5% 1/10W R320 1-216-019-00 METAL CHIP 56 5% 1/10W SENSOR >  R5614 1-218-968-11 RES-CHIP 18K 5% 1/16W (TRV840) R5618 1-218-969-11 RES-CHIP 470 5% 1/16W R5618 1-218-949-11 RES-CHIP 470 5% 1/16W R5618 1-218-987-11 RES-CHIP 680K 5% 1/16W SE302 1-803-042-31 SENSOR, ANGULAR VELOCITY (PITCH) SE302 1-803-042-41 SENSOR, ANGULAR VELOCITY (YAW) (SERVICE) SERVICE)	R5590	1-218-990-11	R5590	SHORT	0					< RESISTOR >			
R5611 1-218-980-11 RES-CHIP 180K 5% 1/16W R5612 1-218-969-11 RES-CHIP 22K 5% 1/16W R316 1-216-817-11 METAL CHIP 0 5% 1/16W R319 1-216-019-00 METAL CHIP 56 5% 1/10W R319 1-216-019-00 METAL CHIP 56 5% 1/10W R319 1-216-019-00 METAL CHIP 56 5% 1/10W R320 1-216-019-00 METAL CHIP 56 5% 1/10W R320 1-216-019-00 METAL CHIP 56 5% 1/10W R320 1-216-019-00 METAL CHIP 56 5% 1/10W R320 1-216-019-00 METAL CHIP 56 5% 1/10W R320 1-216-019-00 METAL CHIP 56 5% 1/10W R320 1-216-019-00 METAL CHIP 56 5% 1/10W R320 1-218-969-11 RES-CHIP 18K 5% 1/16W R320 1-216-019-00 METAL CHIP 56 5% 1/10W R320 1-216-019-00 METAL CHIP 56 5% 1/10W R320 1-216-019-00 METAL CHIP 56 5% 1/10W R320 1-218-949-11 RES-CHIP 470 5% 1/16W R320 1-216-019-00 METAL CHIP 56 5% 1/10	R5609	1-218-965-11	R5609	RES-CHIP	10K	5%	1/16W						
R5612 1-218-969-11 RES-CHIP 22K 5% 1/16W R319 1-216-019-00 METAL CHIP 470 5% 1/16W R319 1-216-019-00 METAL CHIP 56 5% 1/10W R320 1-216-019-00 METAL CHIP 56 5% 1/10W R320 1-216-019-00 METAL CHIP 56 5% 1/10W R320 1-216-019-00 METAL CHIP 56 5% 1/10W R320 1-216-019-00 METAL CHIP 56 5% 1/10W R320 1-216-019-00 METAL CHIP 56 5% 1/10W SENSOR > SENSOR > SENSOR > SENSOR > SENSOR > SENSOR > SENSOR ANGULAR VELOCITY (PITCH) (SERVICE) R5704 1-218-987-11 RES-CHIP 680K 5% 1/16W SE302 1-803-042-41 SENSOR, ANGULAR VELOCITY (YAW) (SERVICE) SENSOR													
R5614 1-218-965-11 RES-CHIP 10K 5% 1/16W (TRV740/TRV740E:E,HK,AUS,CH,JE) R5614 1-218-968-11 RES-CHIP 18K 5% 1/16W (TRV840) R5617 1-218-969-11 RES-CHIP 22K 5% 1/16W R5618 1-218-949-11 RES-CHIP 470 5% 1/16W R5704 1-218-987-11 RES-CHIP 680K 5% 1/16W SE302 1-803-042-41 SENSOR, ANGULAR VELOCITY (PITCH) R5704 1-218-987-11 RES-CHIP 680K 5% 1/16W SE302 1-803-042-41 SENSOR, ANGULAR VELOCITY (YAW) (SERVICE)  COMPOSITION CIRCUIT BLOCK >													
R5614 1-218-965-11 RES-CHIP 10K 5% 1/16W (TRV740/TRV740E:E,HK,AUS,CH,JE) R5614 1-218-968-11 RES-CHIP 18K 5% 1/16W (TRV840) R5617 1-218-969-11 RES-CHIP 22K 5% 1/16W SE301 1-803-042-31 SENSOR, ANGULAR VELOCITY (PITCH) R5618 1-218-949-11 RES-CHIP 470 5% 1/16W SE302 1-803-042-41 SENSOR, ANGULAR VELOCITY (YAW) R5704 1-218-987-11 RES-CHIP 680K 5% 1/16W SE302 1-803-042-41 SENSOR, ANGULAR VELOCITY (YAW) (SERVICE)	R5612	1-218-969-11	R5612	RES-CHIP	22K	5%	1/16W						
R5614   1-218-968-11   RES-CHIP   18K   5%   1/16W	D5044	4 040 005 44	DE014	DEC CLUB	4017	<b>5</b> 0/	4 /4 00 4 /						
R5614 1-218-968-11 RES-CHIP 18K 5% 1/16W (TRV840)  R5617 1-218-969-11 RES-CHIP 22K 5% 1/16W SE301 1-803-042-31 SENSOR, ANGULAR VELOCITY (PITCH)  R5618 1-218-949-11 RES-CHIP 470 5% 1/16W (SERVICE)  R5704 1-218-987-11 RES-CHIP 680K 5% 1/16W SE302 1-803-042-41 SENSOR, ANGULAR VELOCITY (YAW)  (SERVICE)  COMPOSITION CIRCUIT BLOCK >	R5614	1-218-965-11	K5614					R320	1-216-019-00	METAL CHIP	56	5%	1/10W
R5617 1-218-969-11 RES-CHIP 22K 5% 1/16W SE301 1-803-042-31 SENSOR, ANGULAR VELOCITY (PITCH) R5618 1-218-949-11 RES-CHIP 470 5% 1/16W (SERVICE) R5704 1-218-987-11 RES-CHIP 680K 5% 1/16W SE302 1-803-042-41 SENSOR, ANGULAR VELOCITY (YAW) (SERVICE)  < COMPOSITION CIRCUIT BLOCK >	R5614	1-218-968-11	R5614				1/16W			< SENSOR >			
R5618 1-218-949-11 RES-CHIP 470 5% 1/16W (SERVICE) R5704 1-218-987-11 RES-CHIP 680K 5% 1/16W SE302 1-803-042-41 SENSOR, ANGULAR VELOCITY (YAW) (SERVICE)  < COMPOSITION CIRCUIT BLOCK >	R5617	1-218-969-11	R5617	RES-CHIP	22K	5%	` ,	SF301	1-803-042-31	SENSOR ANGUI	AR VELOCI	TY (PITC	:H)
R5704 1-218-987-11 RES-CHIP 680K 5% 1/16W SE302 1-803-042-41 SENSOR, ANGULAR VELOCITY (YAW)  (SERVICE)  < COMPOSITION CIRCUIT BLOCK >								02001	1 000 012 01	OLINOOTI, ANGOL	ANT VELOCI	(	,
< COMPOSITION CIRCUIT BLOCK >					680K			SE302	1-803-042-41	SENSOR, ANGUL	AR VELOCI	ΓΥ (YAW	<u>'</u> )
				< COMPOSITION (	CIRCUIT BL	.0CK >				. VADICTOD .			(SERVICE)
RB5501 1-234-372-21 RES, NETWORK 100X4 (1005) VDR301 1-801-923-11 VARISTOR, CHIP	RB5501	1-234-372-21	RB5501	RES, NETWORK 10	00X4	(1005)		V/DD301	1_801_022_11				
<pre></pre>				< TRANSFORMER	>			VDR302	1-801-923-11	VARISTOR, CHIP			
△ T5601 1-435-227-11 TRANSFORMER, INVERTER (TRV740/TRV740E:E,HK,AUS,CH,JE)	<b>△</b> T5601	1-435-227-11	T5601	· ·		F·F HK Δ	US CH JE)	V D11303	1 001-920-11	vacuoron, unif			
<u>↑ T5601 1-435-785-11 TRANSFORMER, INVERTER (TRV840)</u>	<u> </u>	1-435-785-11	T5601										

Note:

The components identified by mark A or dotted line with mark  $\triangle$  are critical for safety. Replace only with part number specified.

#### Note:

Les composants identifiés par une marque  $\triangle$  sont critiques pour la sécurité. Ne les remplacer que par une

pièce portant le numéro spécifié.

#### VC-278

Ref. No.	Part No.	Description	Ref. No.	Part No.	<u>Description</u>				
		VC-278 (GNA) BOARD, COMPLETE (SERVICE) (TRV740/TRV840) ************************************	are not shown.						
	A-7012-363-A	VC-278 (GPA) BOARD, COMPLETE (SERVICE) (TRV740E) ************************************							

Ref. No. Part No. Description

#### **ACCESSORIES** 1-475-141-61 REMOTE COMMANDER (RMT-814) ⚠ 1-475-599-11 ADAPTOR, AC (AC-L10) (TRV738E/TRV740:US,CND,E,JE/ TRV740E:AEP,EE,NE,RU,E,HK,AUS,JE/TRV840) 1-475-599-71 ADAPTOR, AC (AC-L10) (TRV740:KR) ⚠ ⚠ 1-475-599-81 ADAPTOR, AC (AC-L10) (TRV740E:CH) 1-569-007-11 ADAPTOR, CONVERSION 2P (TRV740:JE/TRV740E:JE) 1-569-008-21 ADAPTOR, CONVERSION 2P (TRV740:E/TRV740E:E,HK/TRV840:E) 1-573-291-11 CONNECTOR, CONVERSION 21P (TRV738E/TRV740E:AEP,EE,NE,RU) 1-696-819-11 CORD, POWER (TRV740E:AUS) ⚠ 1-757-293-21 CORD, CONNECTION (USB 5P) 1-765-080-11 CORD, CONNECTION (AV CABLE) (1.5m)

#### Note: The components identified by

#### Note:

Les composants identifiés par une marque  $\triangle$  sont critiques pour la sécurité. Ne les remplacer que par une

pièce portant le numéro spécifié.

Ref. No.	Part No.	Description
$\triangle$	1-769-608-11	CORD, POWER RV740:E/TRV740E:AEP,EE,NE,RU,E/TRV840:E,AR)
$\triangle$	1-776-985-11	CORD, POWER (TRV740:KR)
$\triangle$	1-782-476-11	CORD, POWER (TRV740E:CH)
<u>^</u>	1-783-374-11	CORD, POWER (TRV740E:HK)
$\triangle$	1-790-107-22	CORD, POWER (TRV740:US,CND/TRV840:US,CND)
<u> </u>	1-790-732-11	CORD, POWER (TRV740:JE/TRV740E:JE)
	3-072-414-01	SPVD-008 (CD-ROM USB DRIVER) RV738E/TRV740:E,JE,KR/TRV740E/TRV840:E,AR)
	3-072-650-11	MANUAL, INSTRUCTION (ENGLISH)  (TRV740:US,CND,E,JE/TRV840)
	3-072-650-21	MANUAL, INSTRUCTION (FRENCH) (TRV740:CND/TRV840:CND)
	3-072-650-31 (SPAN	MANUAL, INSTRUCTION IISH/PORTUGUESE) (TRV740:E,JE/TRV840:E,AR)
	3-072-650-41	MANUAL, INSTRUCTION
	3-072-650-51	(TRADITIONAL CHINESE) (TRV740:E) MANUAL, INSTRUCTION
	3-072-650-61	(SIMPLIFIED CHINESE) (TRV740:E) MANUAL, INSTRUCTION (KOREAN)
	3-072-651-11	(TRV740:JE,KR) MANUAL, INSTRUCTION (ENGLISH/RUSSIAN)
	3-072-651-21	(TRV740E:RU,E,HK,AUS,CH,JE) MANUAL, INSTRUCTION (FRENCH/GERMAN)
		(TRV740E:AEP,E,JE)
	3-072-651-31	MANUAL, INSTRUCTION (ARABIC/PERSIAN) (TRV740E:E)
	3-072-651-41	MANUAL, INSTRUCTION (TRADITIONAL CHINESE) (TRV740E:HK)
	3-072-651-51	MANUAL, INSTRUCTION (SIMPLIFIED CHINESE) (TRV740E:E,CH,JE)
	3-072-651-61	MANUAL, INSTRUCTION (ENGLISH DUTCH) (TRV740E:AEP)
	3-072-651-71	MANUAL, INSTRUCTION (SPANISH/PORTUGUESE) (TRV740E:AEP)
	3-072-651-81	MANUAL, INSTRUCTION (ITALIAN/GREEK) (TRV740E:AEP)
	3-072-651-91	MANUAL, INSTRUCTION (ENGLISH/SWEDISH) (TRV740E:NE)
	3-072-652-11	MANUAL, INSTRUCTION (DANISH/FINNISH) (TRV740E:NE)
	3-072-652-21	MANUAL, INSTRUCTION (POLISH/CZECH) (TRV740E:EE)
	3-072-652-31	MANUAL, INSTRUCTION (HUNGARIAN/SLOVAKIAN) (TRV740E:EE)
	3-072-653-21	MANUAL, INSTRUCTION (FRENCH/GERMAN) (TRV738E:AEP)
	3-072-653-31	MANUAL, INSTRUCTION (ENGLISH DUTCH) (TRV738E:AEP)
	3-072-653-41	MANUAL, INSTRUCTION (SPANISH/PORTUGUESE) (TRV738E:AEP)
	3-072-653-51	MANUAL, INSTRUCTION (ITALIAN/GREEK) (TRV738E:AEP)
	3-072-654-01	SPVD-008 (I) (TRV740:US,CND/TRV840:US,CND)
	0.740.051.01	,
	3-742-854-01 3-987-015-01	LID, BATTERY CASE (FOR RMT-814) BELT (S), SHOULDER
	X-3949-376-1	CAP (N) ASSY, LENS
		NP-FM50 BATTERY PACK (NOT SUPPLIED)

The components identified by mark △ or dotted line with mark ⚠ are critical for safety.

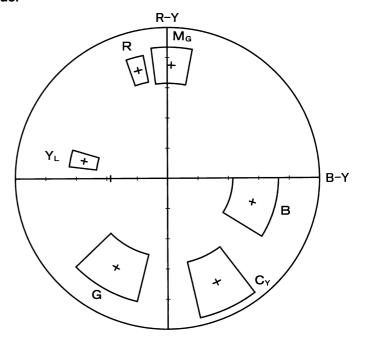
Replace only with part number specified.

#### Note:

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

#### **(FOR CAMERA COLOR REPRODUCTION ADJUSTMENT)**

#### For NTSC model

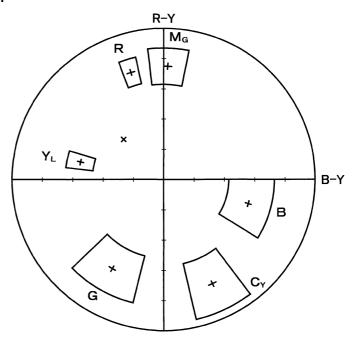


DCR-TRV740/TRV840

Take a copy of CAMERA COLOR REPRODUCTION FRAME with a clear sheet for use.



#### For PAL model



DCR-TRV738E/TRV740E





### **Revision History**

Ver. Date		History	Contents	S.M. Rev. issued		
1.0	2002.03	Official Release	_	_		

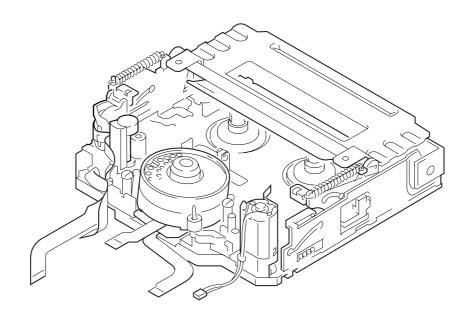
## 8mm Video MECHANICAL ADJUSTMENT MANUAL IX

Ver 1.0 2000. 12

## M2000 MECHANISM



Please use this manual with the service manual of the respective models.



Digital 8 MECHANISM DECK



#### **TABLE OF CONTENTS**

1.	Preparations for Check, Adjustment and
	Replacement of Mechanism Block
1-1. 1-2.	Service Jigs and Tools
2.	Periodic Inspection and Maintenance
2-1.	Rotary Drum Cleaning9
2-2.	Tape Path System Cleaning
2-3.	Periodic Inspection List
2-4.	Appling Oil and Grease
3.	Before Replacement, Check or Adjustment
3-1.	Phase Adjustment
3-2.	Cassette compartment assembly
4.	Check, Adjustment and Replacement
4-1.	Drum Assembly 14
4-2.	HCL Arm Assembly, Loading Motor Assembly 15
4-3.	Drum Base Assembly, Drum Earth 16
4-4.	Guide Rail T2, Capstan Motor 17
4-5.	Blind Plate, Lock Guide ·
4-6.	Reel Table (T) Assembly, T Soft Assembly 19
4-7.	S Ratchet RE Plate, Cassette Guide S20
4-8.	R Drive Gear Assembly, LS Cam Plate 21
4-9.	LS Cam Plate Position Adjustment
4-10.	LS Chassis Block Assembly 23
	TG7 Arm Block Assembly, Pinch Arm Assembly 24
	Guide Base (T) Block Assembly,
	Guide Base (S) Block Assembly25
4-13.	TG1 Arm, Reel Table (S) Assembly, Push Switch (3Key) · 26
	Hall Element (H001, H002 (T/S Reel)),
	Photo Transistor (Q001, Q002 (Tape Top/Tape End)),
	LED (D001 (Tape LED))
4-15.	LS Guide Roller, Guide Lock Plate (T),
	Pinch Pusher Assembly, Eject Arm
4-16.	Rotary Switch, Cam Relay Gear,
	Change Gear Assembly, Timing Belt29
4-17.	Guide Gear Assembly, Guide Gear T Assembly,
	Cam Relay Gear 1, Guide Lock Plate (S) 30
4-18.	LD Gear 4, Cam Gear 1, HC Drive Arm31
	M Slide Plate Assembly, LS Arm Assembly,
	Cam Gear 2, GL Arm Assembly
5.	Adjustment
5-1.	Check and Adjustment of TG1 Back-tension Position ····· 33
5-2.	Check and Adjustment of FWD/RVS Back-tension 34
5-3.	Capstan Motor Azimuth Position Adjustment 35
5-4.	Tape Path Adjustment 36
6.	<b>Exploded Views</b>
6-1.	Cassette Compartment Assy, Drum Assy
6-2.	LS Chassis Block Assembly 41
6-3.	Mechanical Chassis Block Assembly-1
6-4.	Mechanical Chassis Block Assembly-2
7.	Printed Wiring Boards and
	Schematic Diagrams44

#### 1. Preparations for Check, Adjustment and Replacement of Mechanism Block

#### Before Replacement, Check or Adjustment

- Refer to the "DISASSEMBLY" section of the SERVICE MANUAL of the respective models for details of removing cabinets and printed wiring boards.
- When checking a mechanism ir making any adjustment to the mechanism or replacing mechanical parts, be sure to use the Mode Selector II and select the appropriate status of the mechanical deck such that the mechanical status is suitable for the desired work. Refer to section "1-2. Mode Selector II Operating Procedure" for details on how to enter the mode shown in a rectangle \_\_\_\_\_ mode in the sequent sections of this manual.
- \* Assemble and adjust the parts in the USE mode if any mode is not specified in this manual.

#### 1-1. Service Jigs and Tools

Ref. No.		Name	Part code	Jig inscription	Used for
J-1	Cleaning fluid		Y-2031-001-0		
J-2	Wiping cloth		7-741-900-53		
J-3	Super-fine applicator (made by Nippon Ap				
J-4	Head eraser		commercially available		Tape path
J-5	Mirror (small oval ty	pe)	J-6080-840-A	GD-2038	Tape path
J-6	Alignment topo	NTSC : WR5-1NP			For tracking adjustment
J-0	Alignment tape	PAL: WR5-1CP	8-967-995-07		Tor tracking adjustment
J-7	FWD/RVS take-up to	orque cassette	J-6080-824-A	GD-2086	
J-8	Tape path screwdrive	r	J-6082-026-A		For tape guide adjustment
J-9	Adjustment remote c	ommander (RM-95 upgrated)	J-6082-053-B		Tape path (for setting the path mode)(Note)
J-10	MD process table		J-6082-166-A		
J-11	Floil grease		7-662-001-39		
J-12	Torque screwdriver		J-9049-330-A		
J-13	Mode Selector II		J-6082-282-B		
J-14	Mode Selector II con	version board	J-6082-516-A		
J-15	Mode Selector II RO	M, Ver 1.6	J-6082-314-E		
J-16	Thickness gauge		9-911-053-00		For capstan azimuth adjustment, LS cam plate position adjustment

#### Other required equipment:

- Oscilloscope
- Analog tester (20  $k\Omega)$

**Note:** If the micro processor IC in the adjustment remote commander is not the new micro processor (UPD7503G-C56-12), the pages cannot be switched. In this case, replace with the new micro processor (8-759-148-35).

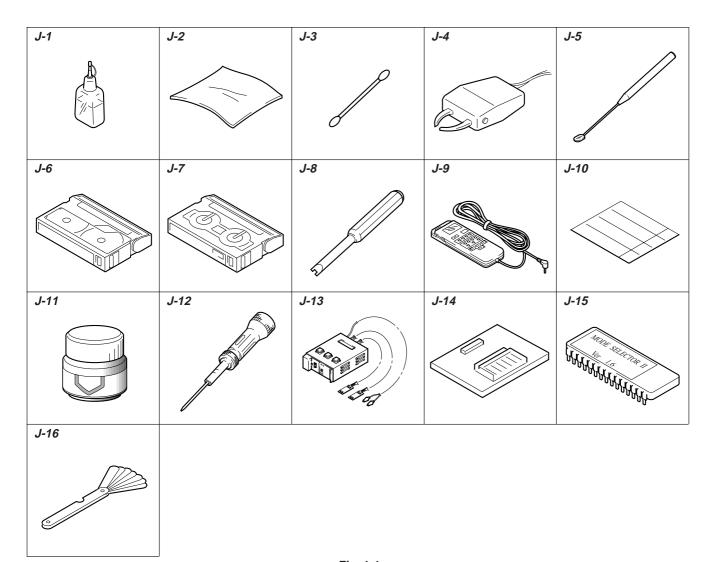


Fig. 1-1.

#### 1-2. Mode Selector II Operating Procedure

#### 1-2-1. Introduction

The Mode Selector II is a mechanism drive tool that assists maintenance work of the various mechanism decks. It has the following functions.

#### 1. Manual Test

In this mode, the motor of the mechanism deck is powered only during the period while the switch is turned on manually. Using the Manual Test, the operator can freely control the motor of the mechanism deck.

#### 2. Step Test

In this mode, the motor of the mechanism deck is kept turned on until the mechanical status is changed from the present mechanical status that is obtained from the sensor information. The Step Test is used to confirm a series of movements of the mechanism deck.

#### 3. Auto Test

The Mode Selector II stores the status transition table in its memory as data indicating the respective modes of the mechanism deck. The status transition table can be used to confirm whether a mechanism deck is operating normally or has abnormality from a series of movements of a mechanism deck. If an abnormal status transition is detected during operation, the "NG" indication appears and the mechanism stops moving.

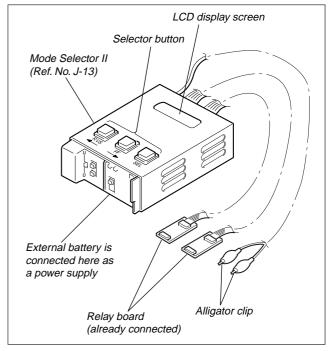


Fig. 1-2.

#### Mode Selector II (J-6082-282-B) connection diagram

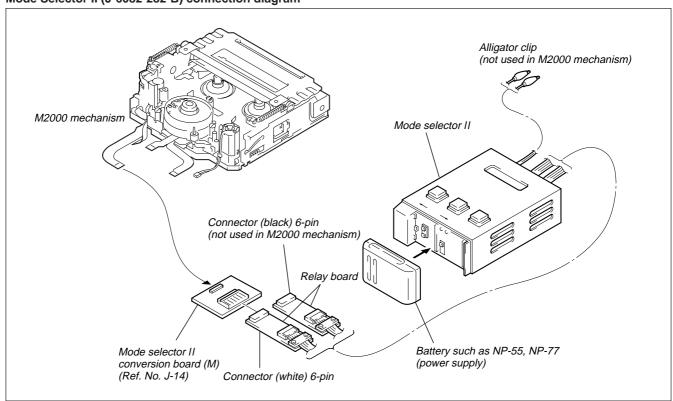
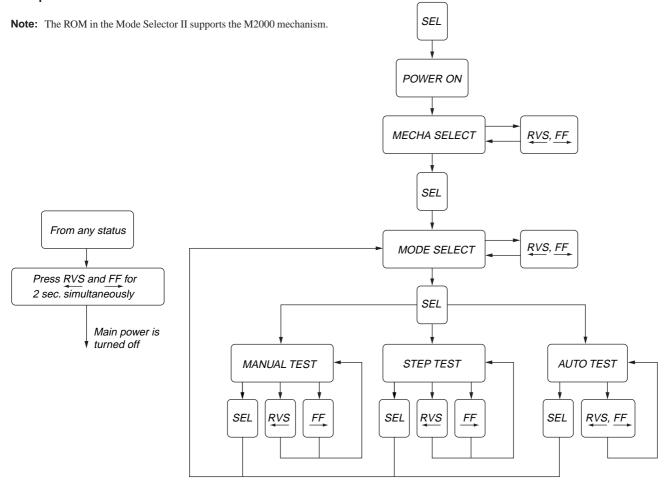


Fig. 1-3.

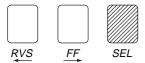
#### 1-2-2. Operation

#### 1. Operation Flow Chart



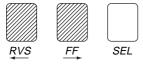
#### 2. Mode Selector II Power On

Turn on the main power of the Mode Selector II as follows. Press the SEL button.



#### 3. Mode Selector II Power Off

Turn off the main power of the Mode Selector II as follows. Press the RVS and FF buttons at the same time for 2 seconds or longer while the power is on.



#### 4. Mecha Select

When the main power is turned on, the MECHA SELECT display appears on the LCD screen. Select the desired mechanism name using the RVS and FF buttons. Selection is complete when the SEL button is pressed. (Fig. A shows the B mechanism.)

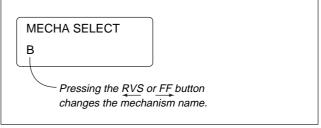


Fig. a

#### 5. Test Type Select

Using the <u>RVS</u> and <u>FF</u> buttons, select a desired test type from the three types of "MANUAL", "STEP" and "AUTO". Selection is complete when the SEL button is pressed.

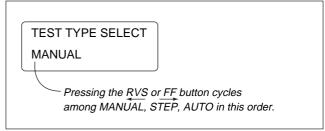


Fig. b

#### 6. Manual Test

In this test, the motor of the mechanism deck is turned on only during the period while the RVS or FF button is pressed manually.

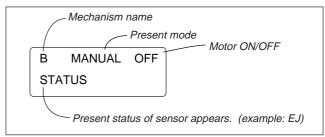


Fig. c

#### 7. Step Test

In this test, the direction of motor movement is determined by the RVS and FF buttons. The motor of the mechanism deck is kept turned on until the mechanical status is changed from the present mechanical status that is obtained from the sensor information.

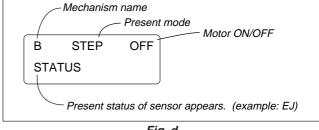


Fig. d

# **8. Auto Test**In this test, the mechanism deck is tested as to whether it performs a series of movements correctly in accordance with the operation sequence that is memorized earlier for each type of deck, by checking the output signals from sensors with the stored memory. Turning

on the RVS or FF button performs the same operation.

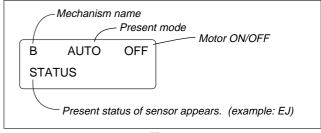


Fig. e

#### 1-2-3. Mechanism Status (Position) Transition Table Using Mode Selector II

After selecting a mechanism deck, select either the MANUAL or STEP test (not AUTO) using the Mode Selector II. The desired mechanism status (position) can be specified by pressing the RVS or FF button. (The selected status appears on STATUS.)

	(		-F	/
EJ↔USE↔	LOAD↔	STOP↔	TURN←	•RP←→REW

Code	_	name		M2000 Mechanism
A	В	C		
1	0	0	1	EJ
1	1	0	2	USE
0	1	0	3	LOAD
0	1	1	4	STOP
0	0	1	5	TURN
0	0	0	6	RP
1	0	1	7	REW

0 is common and short. 1 is common and open.

#### 1-2-4. Battery Alarm Indication

When the level of the battery used to supply power to this system decreases, this display appears asynchronously. When this happens, all operations are disabled and the battery must be replaced.

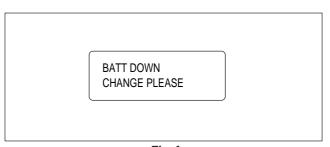


Fig. f

#### 2. Periodic Inspection and Maintenance

Be sure to perform the following maintenance and inspection so
that the machine delivers its full performance and functions, and
to protect the machine and tape. Also, perform the following
maintenance items after completing the repair work, regardless
of the number of hours the machine has been operated by the
user.

#### 2-1. Rotary Drum Cleaning

 Press a wiping cloth (Ref. No. J-2) moistened with cleaning fluid (Ref. No. J-1) lightly against the rotary drum. Rotate the upper drum with a super-fine applicator slowly in the counterclockwise direction to clean the rotary drum.

**Caution:** Never rotate the rotary drum by turning on the main power of the motor or rotate it in the clockwise direction. Never move the cloth vertically against the head tip, as this will surely damage the video head; the video head must not be cleaned by any other different methods.

## 2-2. Tape Path System Cleaning (Refer to Fig. 2-1.)

- 1) Set the EJECT state. Clean the tape running path (TG1, 2, 3, 4, 5, 6 and 7, pinch roller and capstan shaft) and lower drum with a super-fine applicator (Ref. No. J-3) moistened with cleaning fluid.
- **Note 1:** Be careful not to allow oil or grease of the various link mechanisms to get on the super-fine applicator (Ref. No. J-3).
- **Note 2:** Once the super-fine applicator has been moistened with alcohol, do not use it to clean other mechanical parts such as the tape guide. However, the pinch roller is cleaned with alcohol.
- **Note 3:** When cleaning the capstan shaft, be carefull not to move the oil seal. If the oil seal is moved, oil will leak.

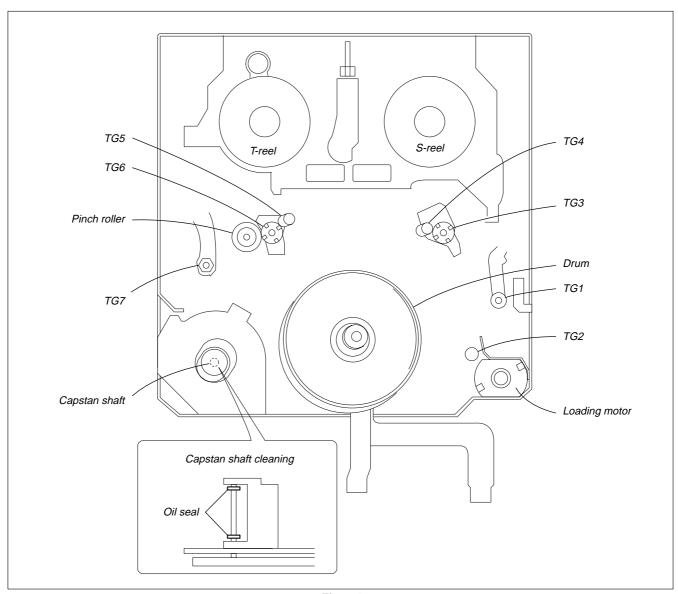


Fig. 2-1

#### 2-3. Periodic Inspection List

Mai	Maintenance and inspection item				Оре	erating	hours	(H)				Remarks
IVIA			1000	1500	2000	2500	3000	3500	4000	4500	5000	Remarks
	Tape running surface cleaning	0	0	0	0	0	0	0	0	0	0	Be careful not to attach oil
	Rotary drum cleaning and degaussing	0	0	0	0	0	0	0	0	0	0	Be careful not to attach oil
	Timing belt	_	☆	_	☆	_	☆	_	☆	_	☆	
Drive mechanism	Capstan shaft	_	☆	_	☆	_	☆		☆	_	☆	Never attach oil to the tape running path during periodic inspection.
-	Loading motor	_	☆	_	☆	_	☆	_	☆	_	☆	
9	Abnormal sound	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	
nan eck	Back-tension measurement	_	☆	_	☆	_	☆	_	☆	_	☆	
Performance check	Brake system	_	☆	_	☆	_	☆	_	☆	_	☆	
Pe	FWD/RVS torque measurement	_	☆	_	☆	_	☆	_	☆	_	☆	

**Note:** When the machine is overhauled, replace the parts referring to the above list.

O: Cleaning, ☆: Check

#### 2-4. Appling Oil and Grease

When replacing or assembling the parts, use oil and grease while referring to the following.

#### On Oil

• Be sure to use the specified grease only. (If oil of different viscosity is used, it can cause various troubles.)

Oil: Part No. 7-661-018-18

(Mitsubishi diamond oil hydro fluid NT-68)

- The oil used for bearings must not contain any dust or other materials, otherwise excessive abrasion and seizure of the bearing could occur.
- A drop of oil means the amount of oil as shown in the illustration in the right, which is the amount that is attracted to the top of a rod of 2 mm diameter.

#### On Grease

• Be sure to use the specified grease only. (If oil of different viscosity is used, it can cause various troubles.)

Floil grease: Part No. 7-662-001-39

- Be sure to use grease into which dust is not mixed.
- The amount of grease is 1 to 1.5 mm diameter in length.

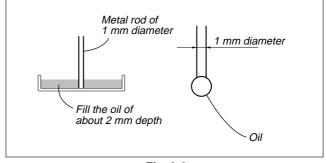


Fig. 2-2

#### 3. Before Replacement, Check or Adjustment

#### 3-1. Phase Adjustment

The phase adjustment of this mechanism block has been adjusted by using the in-phase markings shown in the following figure. When replacing or assembling the parts, check the phase.

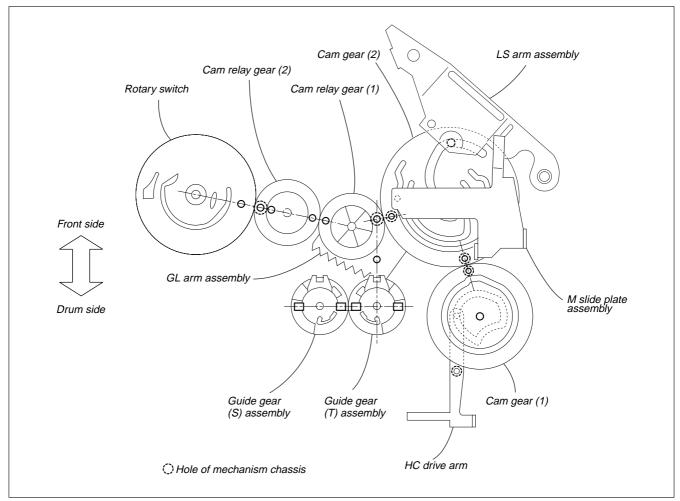


Fig. 3-1.

#### 3-2. Cassette compartment assembly

#### 1. Removal procedure

- Set the EJ mode to move up the cassette compartment assembly <sup>(1)</sup>.
- 2) Remove the capstan flexible board and flexible wiring board (FP-300) ① from the holders ②, ③ and ② in the directions of the arrows ④, ⑧ and ⑤.
- Push the damper assembly ③ in the directions of the arrows
   and ⑤ and remove it from the notch of the LS chassis block assembly.
- 4) Remove the two screws (camera pan2 main M1.4  $\times$  1.6) 4.
- 5) With the cassette compartment assembly ① half opened, move the face plate in the direction of the arrow ⑤ and remove it from the grooves ⑥ and ⑦ on the LS chassis block assembly.
- 6) Remove the cassette holder (S) (a) and cassette holder (T) (a) of the cassette compartment assembly (b) from the groove on the LS chassis block assembly.

- 1) Set the USE mode.
- 2) Insert the cassette holder (S) (8) of the cassette compartment assembly (10) and cassette holder (T) (10) into the grooves on both sides of the LS chassis block assembly.
- 3) While moving down the cassette compartment assembly ①, lift up the face plate in the direction of the arrow ① and keep this status. Then, insert the face plate in the grooves ⑥ and ⑦ on the LS chassis block assembly.
- 4) Tighten the two screws (camera pan2 main M1.4×1.6) ④. Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
- 5) Move the damper arm of the damper assembly ③ to the 4 o'clock position and insert the damper assembly into the hole on the LS chassis block assembly and the dowel of the cassette holder (T) ⑨.
- 6) Align the damper assembly ③ with the notch of the LS chassis block assembly and rotate the damper assembly ③ in the opposite direction to the arrow ⑤ to fix it.

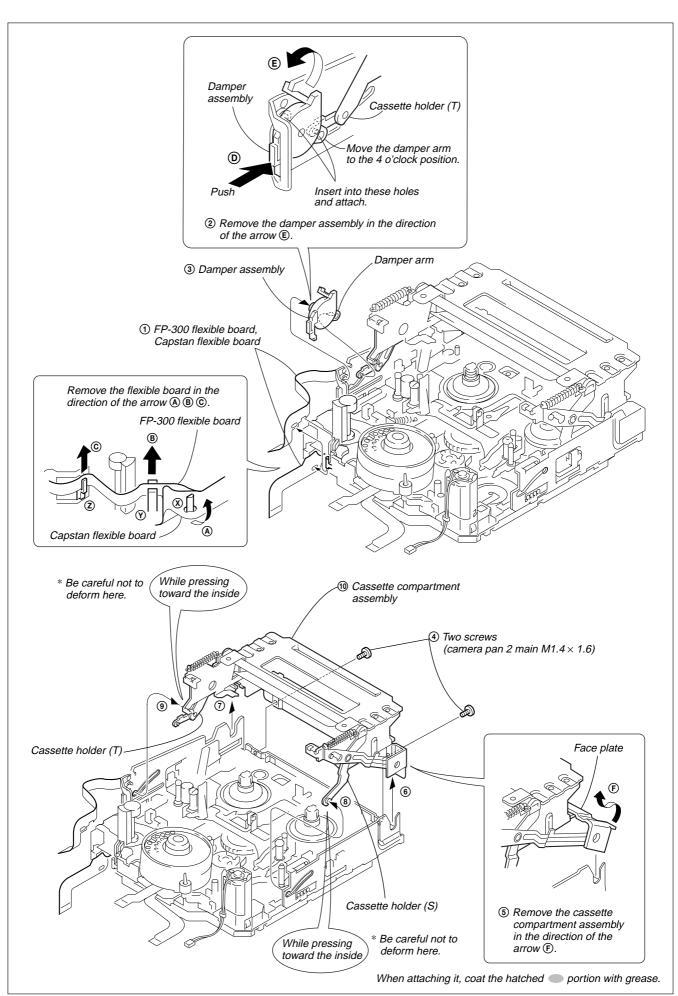


Fig. 3-2.

#### 4. Check, Adjustment and Replacement

Note: For removal procedure of the cabinets, printed wiring boards and other parts, refer to "DISASSEMBLY" of the Service Manual of the respective

#### 4-1. Drum Assembly

#### 1. Removal procedure

1) Remove the three screws (drum fitting  $M1.4 \times 2.5$ ) ① fixing the drum and remove the drum.

#### 2. Attachment procedure

- 1) Align the two reference holes A and B on the rear of the drum with the reference pins A and B of the drum base assembly.
- 2) Attach the drum with the three screws (drum fitting M1.4  $\times$  2.5) ① in the order of ②, ③ and ③. Tightening torque:  $0.078 \pm 0.01 \text{ N} \cdot \text{m} \ (0.8 \pm 0.1 \text{ kgf} \cdot \text{cm})$
- 3) Clean the drum while referring to 2-1.
- 4) Adjust the tape path. (Refer to "4. Tape Path Adjustment".)

**Note:** Do not touch the outside circumference.

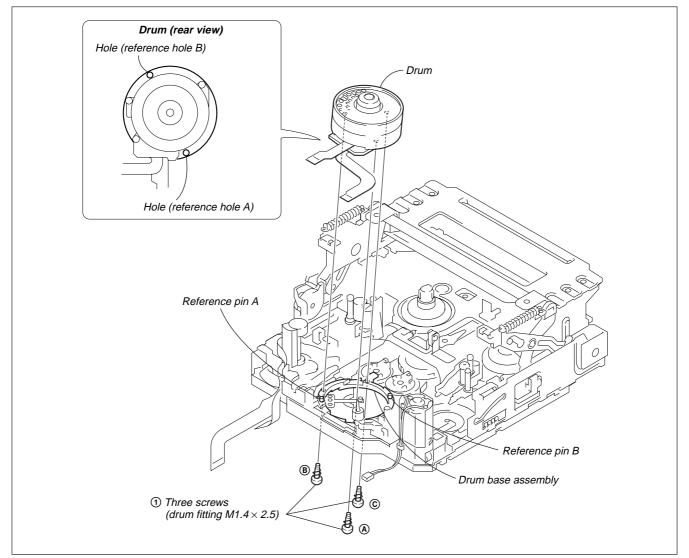


Fig. 4-1.

#### 4-2. HCL Arm Assembly, Loading Motor Assembly

#### 1. Removal procedure

- 1) Hook the HC arm spring in the direction of the arrow **B**.
- Remove the HCL arm assembly ② from the loading motor assembly ④.
- 3) Remove the screw  $(M1.4 \times 2.5)$  ③.
- Remove the three claws of the loading motor assembly (4) from the mechanism chassis assembly in the direction of the arrow (8).

- Coat the worm shaft and gear of the loading motor assembly
   with grease.
- Insert the three claws of the loading motor assembly into the groove on the mechanism chassis assembly.
- Attach the screw (M1.4 × 2.5) ③.
   Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
- 4) Check the position of the HCL arm assembly ② and the HC drive arm. Then attach the HCL arm assembly ② to the loading motor assembly ④.
- Hook the HC arm spring ① on the notch of the loading motor assembly ④.
- 6) Clean the drum assembly. (Refer to section 2-1.)

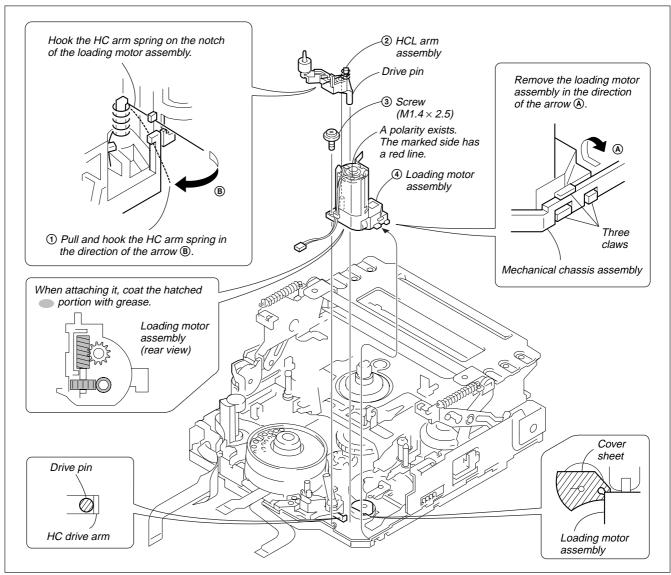


Fig. 4-2.

#### 4-3. Drum Base Assembly, Drum Earth

#### 1. Removal procedure

- 2) Remove the drum assembly. (Refer to section 4-1.)
- 3) Remove the screw  $(M1.4 \times 2.5)$  ②.
- 4) Remove the claw ① of the guide rail T2 ③ from the hole ⑤ of the drum base assembly in the direction of the arrow ⑥.
- 5) Remove the three screws  $(M1.4 \times 2.5)$  **4**.
- 6) Remove the drum base assembly (5) in the direction of the arrow.
- 7) Remove the screw (screw assy PW  $M1.7 \times 2.6$ ) **6**.
- 8) Remove the drum earth ① and earth spacer ⑧.

- 1) Attach the ground spacer (a) and drum ground (7) with the screw (screw assy PW M1.7 × 2.6) (b).
  - Tightening torque:  $0.078 \pm 0.01 \text{ N} \cdot \text{m} (0.8 \pm 0.1 \text{ kgf} \cdot \text{cm})$
- 2) Align the drum base assembly (§) with the reference pin and tighten the three screws (M1.4 × 2.5) (4) in the order of (©), (H) and (1).
- 3) Insert the claw ① of the guide rail T2③ into the hole ② of the drum base assembly ③ and tighten the screw (M1.4×2.5) ②. Tightening torque: 0.078 ± 0.01 N•m (0.8 kgf•cm)
- 4) Remove the drum assembly. (Refer to 4-1.)
- 5) Attach the flexible wiring board (FP-300) ① and capstan flexible board to the drum base assembly.
- 6) Clean the tape running path. (Refer to 2-2.)

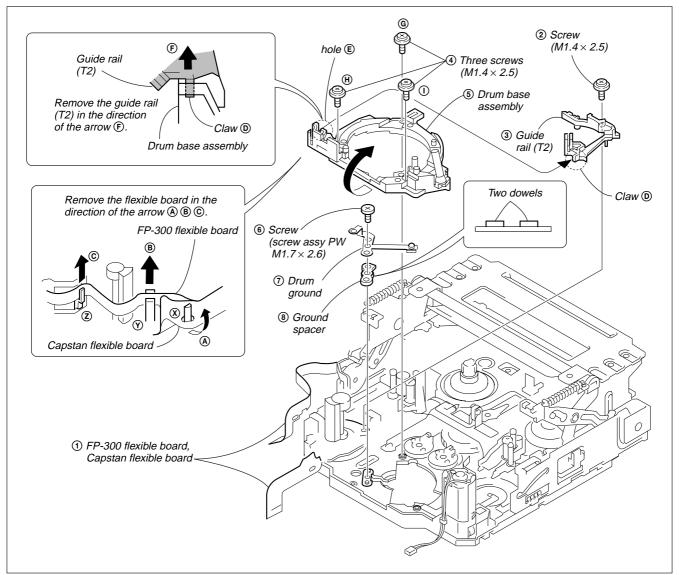


Fig. 4-3.

#### 4-4. Guide Rail T2, Capstan Motor

#### 1. Removal procedure

- 1) Remove the capstan flexible board and flexible wiring board (FP-300) ① from the holders ②, ③ and ② in the directions of the arrows ④, ⑧ and ⑥.
- 2) Remove the screw  $(M1.4 \times 2.5)$  ②
- 3) Remove the claw of the guide rail T2 ③ from the hole on the drum base assembly in the direction of the arrow ⑤.
- 4) Remove the six solderings **4**.
- 5) Remove the FP-228 flexible wiring board (2P) (DEW sensor) (5).
- 6) Remove the two screws (camera pan2 main M1.4 × 1.6) (and the screw (SANG camera pan2 main M1.4 × 4.5) (7).
- 7) Remove the capstan motor **8**.
- 8) Remove the capstan spring (a) (be careful not to drop the capstan spring) and timing belt (b).

#### 2. Attachment procedure

- Hook the timing belt ① on the gear of the capstan motor ②, attach the capstan motor while aligning it with the reference boss of the mechanism chassis assembly.
- 2) Attach the screw (SANG camera pan2 M1.4  $\times$  4.5) 7 and capstan spring 9. (temporally attachment)
- 3) Attach the two screws (camera pan2 M1.4 × 1.6) **(6)**. Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
- Attach the six solderings (4) to the FP-228 flexible wiring board
   (2P) (DEW sensor) and the FP-299 flexible wiring board
   (4P).
- 5) Insert the guide rail T2 ③ into the hole on the drum base assembly and tighten the screw (M1.4 × 2.5) ②.

  Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
- 6) Attach the capstan flexible board and the flexible wiring board (FP-300) ① to the holders ②, ③ and ②.
- 7) Adjust the height of the capstan motor using the thickness gauge (Ref. No. J-16). (Refer to 5-3.)

**Note:** Be careful not to touch the center of the capstan motor <sup>(1)</sup> shaft and the FP-228 flexible wiring board (DEW sensor) with soldering iron or other tool.

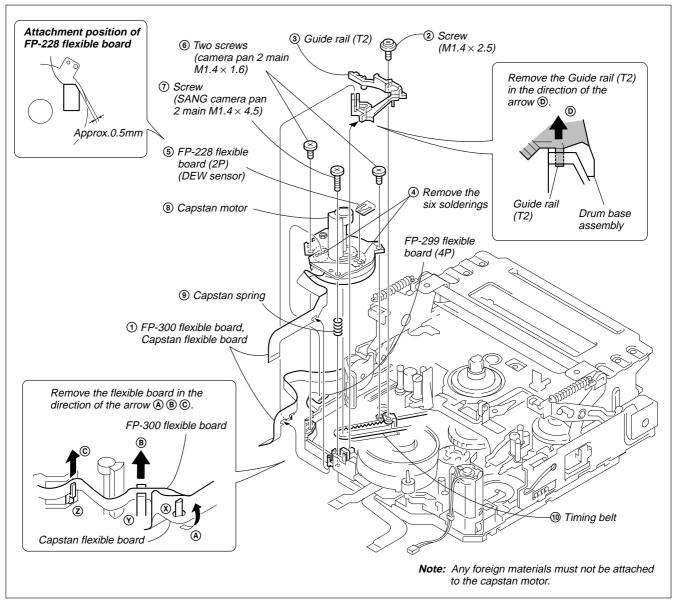


Fig. 4-4.

#### 4-5. Blind Plate, Lock Guide

#### 1. Removal procedure

- 1) Remove the diode D001 (tape LED) ① from the notch of the plate ④.
- 2) Remove the flexible wiring board ② (FP-301) from T-shaped portion of the blind plate ④ in the direction of the arrow ④.
- 3) Remove the screw (camera pan2 main  $M1.4 \times 1.6$ ) ③.
- 4) Release the hook on the notches (©), (E) and (F) of the blind plate (4) in the direction of the arrow (B).
- 5) Remove the reel release lever (5) in the direction of the arrow(6)

- 1) Attach the reel release lever **(5)** to the blind plate **(4)**.
- 2) Hang the notches (a), (b), (c) and (c) of the blind plate (4) on the hook.
- 3) Attach the screw (camera pan2 main M1.4  $\times$  1.6) ③. Tightening torque:  $0.078 \pm 0.01 \text{ N} \cdot \text{m}$  ( $0.8 \pm 0.1 \text{ kgf} \cdot \text{cm}$ )
- 4) Attach the flexible wiring board (FP-301) ② to the T-shaped portion of the blind plate ④.
- 5) Attach the diode (tape LED) ① to the notch of the blind plate ④.

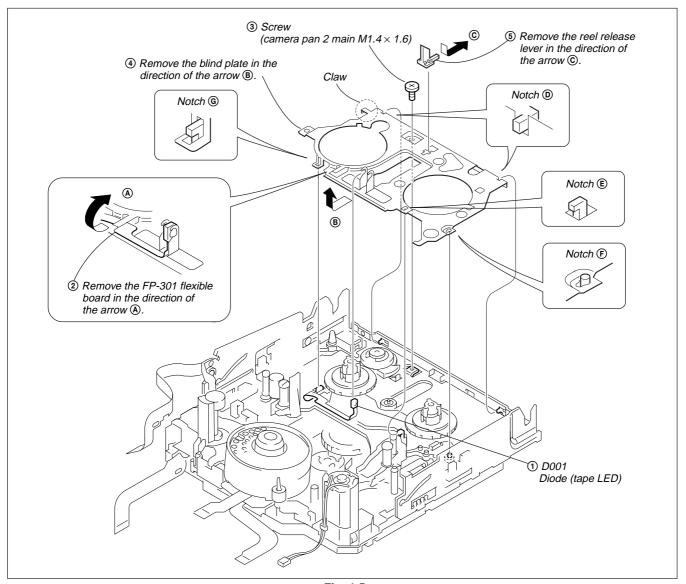


Fig. 4-5.

#### 4-6. Reel Table (T) Assembly, T Soft Assembly

#### 1. Removal procedure

- 1) Remove the blind plate. (Refer to 4-5.)
- Open the claw of the reel table T assembly ① in the directions
  of the arrows 

   and ② and remove the reel table T assembly.
- Remove the T soft assembly ② in the direction of the arrow
   A.
- 4) Remove the T ratchet spring ③.
- 5) Remove the T ratchet arm 4 in the direction of the arrow **①**.

- Insert the T ratchet arm 4 into the groove on the LS chassis block assembly to attach it.
- Attach the T ratchet spring 3 to the notch of the T ratchet arm
   and LS chassis block assembly.
- 3) Insert the T soft assembly into the groove on the LS chassis block assembly.
- Check the location of the reel table T assembly and attach the LS chassis block assembly to the shaft.
- 5) Attach the blind plate. (Refer to 4-5.)

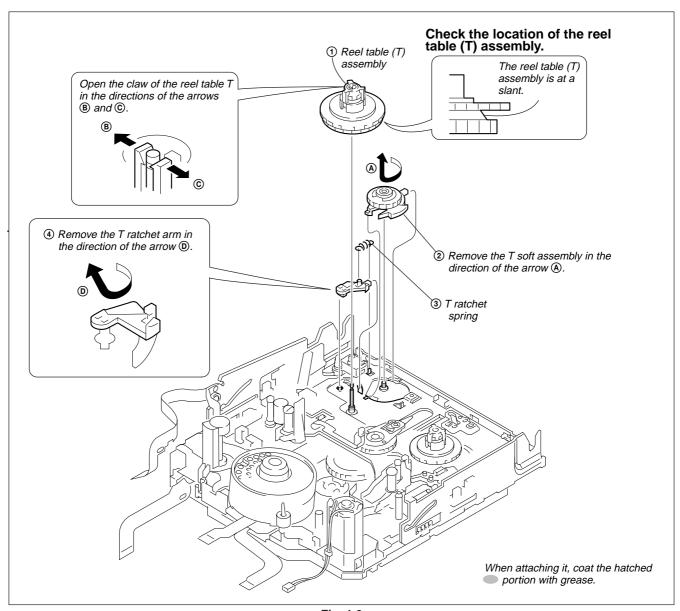


Fig. 4-6.

#### 4-7. S Ratchet RE Plate, Cassette Guide S

#### 1. Removal procedure

- 1) Remove the blind plate. (Refer to 4-5.)
- Remove the RE return plate spring ①.
- 3) Remove the S ratchet spring ②.
- Remove the S ratchet arm 3 in the direction of the arrow A.
   Note: Do not reuse the S ratchet arm.
- 5) Remove the S ratchet RE plate.
- 6) Remove the screw (camera tapping M1.4  $\times$  2) (5).
- 7) Remove the cassette guide S (6) in the direction of the arrow (8)

- 1) Attach the cassette guide S 6 to the notch of the LS chassis block assembly with the screw (camera tapping M1.4  $\times$  2).
- Attach the S ratchet RE plate 4 to the shaft of the LS chassis block assembly.
- 3) Attach the S ratchet arm ③ to the shaft of the LS chassis block assembly. At this time, the dowel of the S ratchet RE plate ④ must be inserted into the U-shaped notch of the S ratchet arm ③.
- 4) Hook the S ratchet spring ② on the notch of the S ratchet arm and attach it to the notch of the LS chassis block assembly.
- Attach the RE return plate spring ① to the notch of the LS chassis block assembly.
- 6) Attach the blind plate. (Refer to 4-5.)

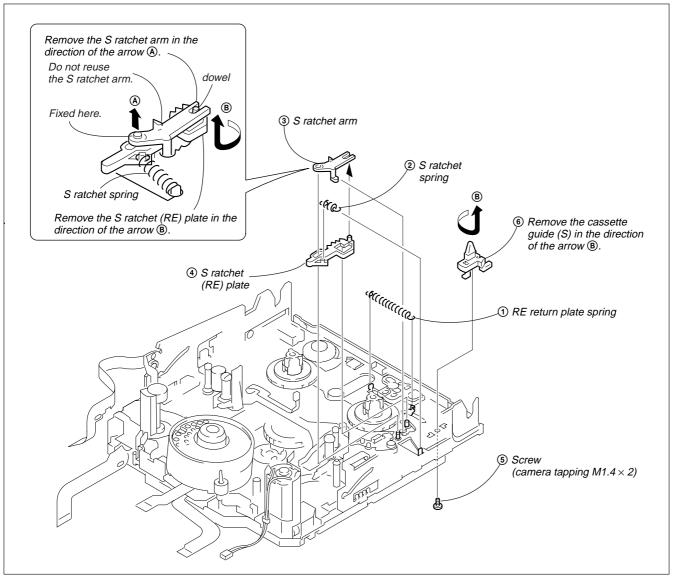


Fig. 4-7.

#### 4-8. R Drive Gear Assembly, LS Cam Plate

#### 1. Removal procedure

- 1) Remove the blind plate. (Refer to 4-5.)
- 2) Remove the lumiler cut washer  $(0.98 \times 3 \times 0.13)$  ①.
- 3) Remove the R drive gear assembly ②.
- 4) Remove the HLC cut  $(1.8 \times 4 \times 0.5)$  ③ and the two screws (precision type3 +P1.7 × 1.8) ④.
- 5) Remove the LS cam plate **⑤**.

- 1) Attach the R drive gear assembly ② with the lumiler cut washer  $(0.98 \times 3 \times 0.13)$  ①.
- 2) Align the LS cam plate 5 with the two dowels of the LS chassis block assembly, temporarily fix the LS cam plate 5 with the two screws (precision type3 +P1.7 × 1.8), then attach it with the HLC cut  $(1.8 \times 4 \times 0.5)$  ③.
- 3) Adjust the position of the LS cam plate. (Refer to 4-9.)

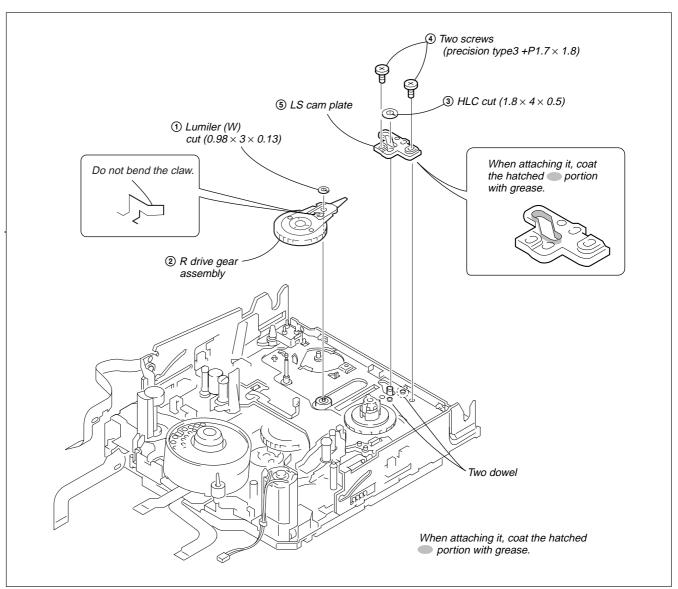


Fig. 4-8.

#### 4-9. LS Cam Plate Position Adjustment

#### 1. Adjustment Procedure

- Perform loading of the LS chassis block assembly ① until the tip of the guide base (S) assembly reaches the drum base assembly.
- Loosen the two screws (precision type3 +P1.7 × 1.8) ② of the LS cam plate and slide the LS chassis block assembly to the drum side so as to remove play.
- 3) Insert the thickness gauge 0.6 mm (Ref. No. J-16) between the LS cam plate and the LS chassis block assembly. Push the LS cam plate in the direction opposite to the drum to remove play.
- 4) Fix the two screws (precision type3 +P1.7 × 1.8) ②. Tightening torque: 0.108 ± 0.01 N•m (1.1 kgf•cm)

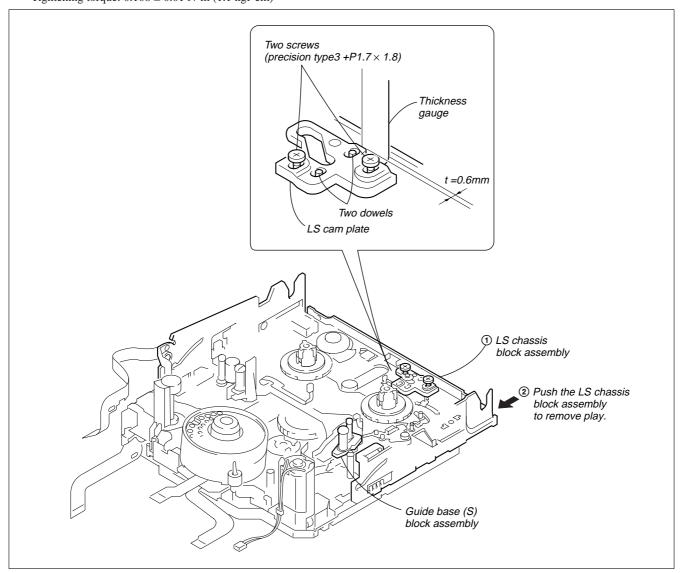


Fig. 4-9.

#### 4-10.LS Chassis Block Assembly

#### 1. Removal procedure

- Move the LS chassis block assembly between USE and LOAD.
- 2) Remove the blind plate. (Refer to 4-5.)
- 3) Remove the R drive gear assembly. (Refer to 4-8.)
- 4) Remove the HCL cut  $(1.8 \times 4 \times 0.5)$  ①
- 5) Remove the three screws  $(M1.4 \times 2.5)$  ②
- Remove the LS chassis block assembly 3 in the direction of the arrow A.

#### 2. Attachment procedure

- Insert the LS guide roller and LS guide T2 pin of the mechanical chassis block assembly into the slot of the LS chassis block assembly .
- 2) Insert the pin of the LS arm assembly into the cam groove on the LS cam plate, face the TG7 drive pin ⑤ in the direction of the arrow ⑥, and insert it to the two slot of the mechanical chassis. Then, tighten the three screws (M1.4 × 2.5) ② in the order of ⑥, ⑥ and ⑥.
  - Tightening torque:  $0.078 \pm 0.01 \text{ N} \cdot \text{m} (0.8 \pm 0.1 \text{ kgf} \cdot \text{cm})$
- 3) Attach the HCL cut  $(1.8 \times 4 \times 0.5)$  ① to the pin of the LS arm assembly.
- 4) Attach the R drive gear assembly. (Refer to 4-8.)
- 5) Attach the blind plate. (Refer to 4-5.)
- 6) Clean the tape running path. (Refer to 2-2.)

Note: Each arm must move smoothly.

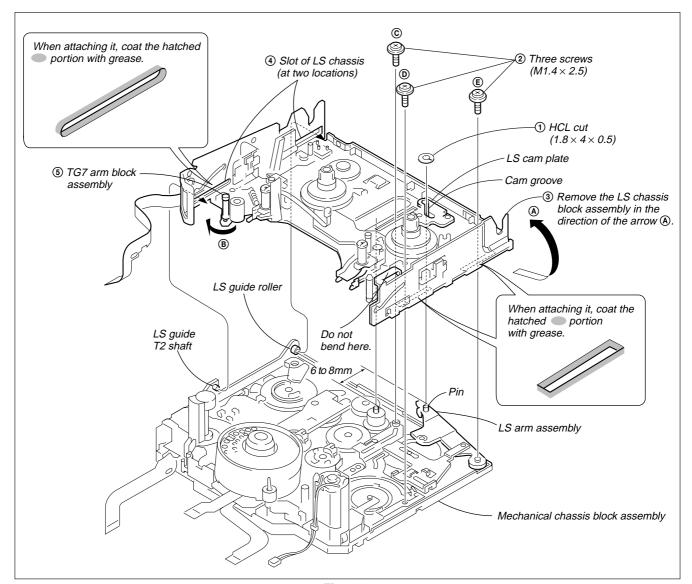


Fig. 4-10.

#### 4-11. TG7 Arm Block Assembly, Pinch Arm Assembly

#### 1. Removal procedure

- 1) Remove the LS chassis block assembly. (Refer to 4-10.)
- 2) Remove the screw (camera pan2 M1.4  $\times$  1.6) ①.
- 3) Remove the TG7 retainer ② in the direction of the arrow.
- Remove the TG7 arm block assembly (6) and TG7 arm spring
   (7).
- 5) Remove the pinch roller arm assembly ③.
- 6) Remove the P lim arm roller 4 and pinch arm load spring 5.

- Attach the P lim arm roller 4 to the pinch roller arm assembly
   3.
- 2) Insert one end of the pinch arm load spring ⑤ into the hole on the rising metal sheet of the LS chassis block assembly, and hook the other end of the spring on the position setting protrusion of the LS-057 board.
- Attach the pinch roller arm assembly ③ to the shaft of the LS chassis block assembly, and hook the pinch arm load spring ⑤ on the rising metal sheet of the pinch roller assembly ③.
- 4) Hook the TG7 arm spring ① on the shaft of the LS chassis block assembly while the hook side of the spring is facing downward.
- 5) When attaching the TG7 arm block assembly **(®)** to the shaft of the LS chassis block assembly, hook the hook side of the TG7 arm spring **(ூ)** on the rising metal sheet of the LS chassis block assembly and hook the top side of the spring to the notch of the TG7 arm block assembly **(®)**.
- 6) Attach the TG7 retainer ② with the screw (camera pan2 M1.4 × 1.6) ①.
- Remove the LS chassis block assembly. (Refer to 4-10.)
   Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
- 8) Clean the tape running path. (Refer to 2-2.)

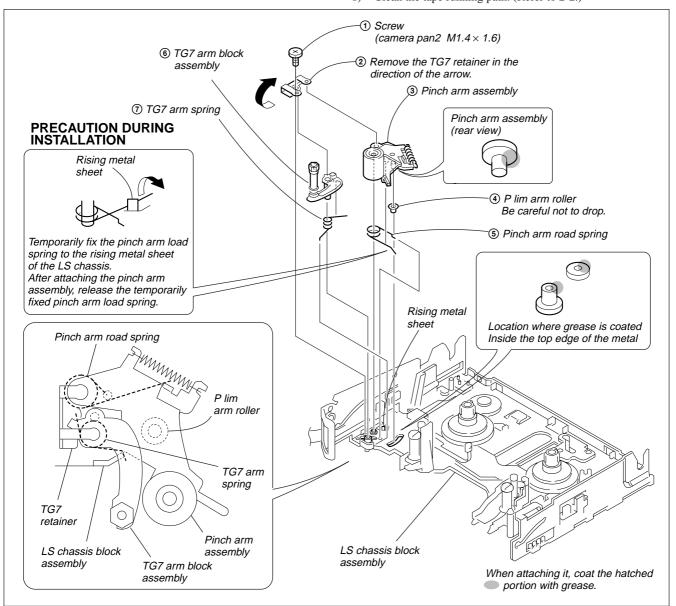


Fig. 4-11.

#### 4-12. Guide Base (T) Block Assembly, Guide Base (S) Block Assembly

#### 1. Removal procedure

- 1) Remove the LS chassis block assembly. (Refer to 4-10.)
- Align the claw of the guide base (T) block assembly ① with the notch of the guide arm T and remove the guide base (T) block assembly.
- 3) Remove the screw  $(M1.4 \times 2.5)$  ② and remove the guide rail (T) ③.
- Align the claw of the guide base (S) block assembly (4) with the notch of the guide arm S and remove the guide base (S) block assembly.
- 5) Remove the screw (M1.4 × 2.5) (§) and remove the guide rail (S) (§).

#### 2. Attachment procedure

- 1) Align the holes on the guide rail (S) (a) with the protrusions (at two locations) of the LS chassis block assembly and attach the guide rail (S) (a) with the screw (M1.4 × 2.5) (a).

  Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
- 2) Attach the guide base (S) block assembly **(4)** while aligning it with the groove on the guide arm S.
- 3) Align the holes on the guide rail (T) ③ with the protrusions (at two locations) of the LS chassis block assembly and attach the guide rail (T) ③ with the screw (M1.4 × 2.5) ②.

  Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
- 4) Attach the guide base (T) block assembly ① while aligning it with the groove on the guide arm T.

**Note:** Do not forget to hook the plate spring.

- 5) Withdraw the joint portion of the guide arm S and the guide arm T in the directions of the arrows A and B.
- Attach the LS chassis block assembly to the mechanical chassis.
   (Refer to 4-10.)
- 7) Clean the tape running path. (Refer to 2-2.)

Note: Be careful of the shape of the guide base T/S block assembly.

Guide base (T) block assembly = Guide base (small)

Guide base (S) block assembly = Guide base (large)

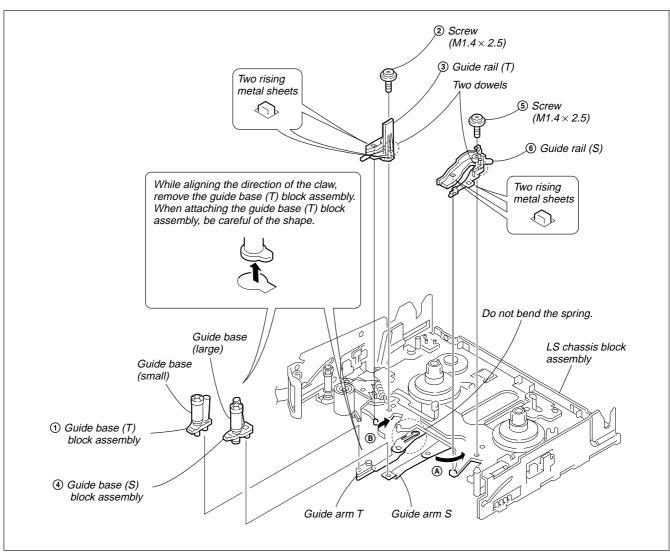


Fig. 4-12.

#### 4-13. TG1 Arm, Reel Table (S) Assembly, Push Switch (3Key)

#### 1. Removal procedure

- Remove the TG1 arm spring ①.
   Note: Take note of the position where the spring has been hooked.
- Remove the TG1 arm ②.
- 3) Open the claw of the reel table (S) assembly ④ in the directions of the arrows ⓐ and ⓒ and remove the reel table S assembly.
- 4) Remove the RVS arm spring **⑤**.
- 5) Rotate the S ratchet arm ③ in the direction of the arrow ⓐ and remove the BT band assembly ⑥.
- 6) Remove the lock guide ⑦.
- 7) Remove the four solderings of the LS-057 board.
- 8) Remove the two claws (9) of the cassette guide T (12) from the notch of the LS chassis.
- 9) Remove the push switch (3key) ① by releasing the two claws of the cassette guide T ②.

#### 2. Attachment procedure

- 1) Attach the push switch (3key) ① to the cassette guide T ② with the two claws ①.
- Attach the cassette guide T <sup>(1)</sup> to the notch of the LS chassis block assembly with the two claws <sup>(9)</sup>.
- 3) Solder the cassette guide T ② to the LS-057 board at the four locations.
- 4) Attach the lock guide ⑦.
- 5) Attach the BT band assembly **6**.
- 6) Check the location of the reel table S ④. Then, rotate the S ratchet arm ③ in the direction of the arrow ④ and insert the band of the BT band assembly ⑥ into the groove on the side.
- 7) Attach the BT band assembly to the TG1 arm ② and attach it to the mechanism chassis block assembly.
- 8) Check the shape of the hook of the TG1 arm spring ①. Hook one end of the spring on the TG1 arm ②. Then, hook the other end of the spring on the same location of the LS chassis block assembly where you have taken note when the spring is removed.
- 9) Attach the RVS arm spring.
- 10) Check the TG1 back-tension. (Refer to 5-1.)

**Note:** The BT band assembly **(5)** must be completely inserted into the groove on the side of the reel table (S) **(4)**.

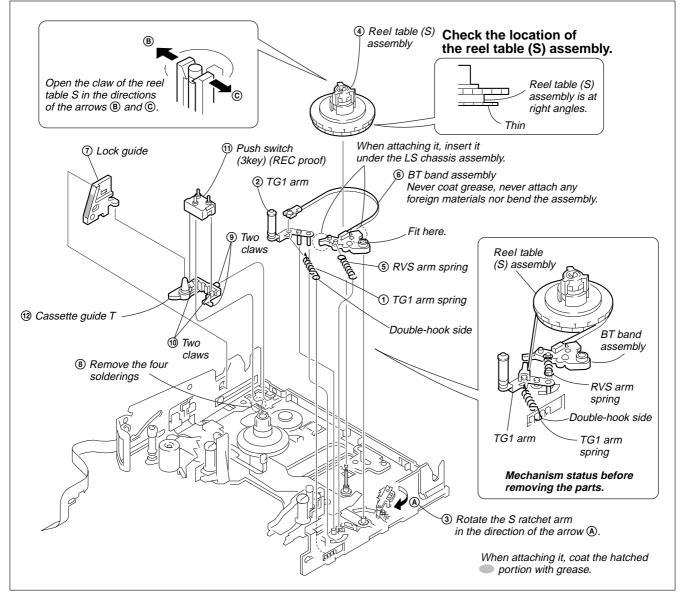


Fig. 4-13.

## 4-14. Hall Element (H001, H002 (T/S Reel)), Photo Transistor (Q001, Q002 (Tape Top/Tape End), D001 (Tape LED)), LED (D001 (Tape LED))

#### 1. Removal procedure

- 1) Remove the LS chassis block assembly. (Refer to 4-10.)
- 2) Remove the LS grease cover.
- 3) Remove the two solderings and remove Q001 (tape top).
- 4) Remove the two solderings and remove Q002 (tape end).
- 5) Remove the two solderings and remove D001 (tape LED).
- Remove the four solderings respectively from H001 (T reel) and H002 (S reel) and remove the H001 and H002.

#### 2. Attachment procedure

- Solder H001 (T reel) and H002 (S reel) respectively at the four locations.
- 2) Solder Q002 (tape end) at the two locations.
- 3) Solder Q001 (tape top) at the two locations.
- 4) Solder D001 (tape LED) at the two locations.
- 5) Attach the LS grease cover.
- Attach the LS chassis block assembly to the mechanical chassis.
   (Refer to 4-10.)

**Note:** Be careful of the plarities of the Hall element (H001, H002), Phototransistor (Q001, Q002) and LED (D001).

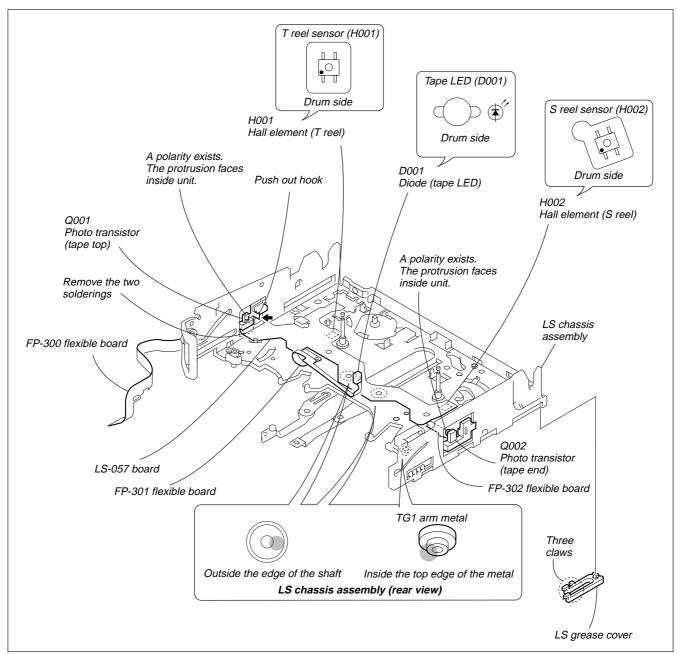


Fig. 4-14.

## 4-15. LS Guide Roller, Guide Lock Plate (T), Pinch Pusher Assembly, Eject Arm

#### 1. Removal procedure

- 1) Remove the LS chassis block assembly. (Refer to 4-10.)
- 2) Remove the LS guide roller ①.
- Remove the P pressure plate spring ②.
- 4) Remove the HLW cut  $(0.98 \times 3 \times 0.25)$  3
- 5) Remove the pitch pressure plate assembly **4** in the direction of the arrow **A**.
- 6) Remove the relay gear **5**.
- 7) Remove the screw (camera pan  $2M1.4 \times 1.6$ ) **6**.
- Remove the guide lock plate (T) (2) in the direction of the arrow
   (B).
- Remove the eject arm spring (3) and HLW cut (0.98 × 3 × 0.25) (9).

**Note:** Do not reuse the HLW cut.

10) Remove the eject arm ①.

#### 2. Attachment procedure

- 1) Attach the eject arm spring (8) to the eject arm (10).
- Hook one end of the eject arm spring ® on the protrusion of the main chassis block assembly and attach the eject arm to the shaft.
- 3) Attach the HLW cut  $(0.98 \times 3 \times 0.25)$  **9**. Do not reuse the HLW cut.
- Attach the guide lock plate T ⑦ while aligning it with the notches ⑥ and ⑥.
- 5) Attach the screw (camera pan2 M1.4 × 1.6) **(6)**. Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
- 6) Attach the relay gear **⑤**.
- 7) Attach the pinch pusher plate 4 with the HLW cut  $(0.98 \times 3 \times 0.25)$  3.
- 8) Attach the P pressure plate spring ②.

  Insert the concave side of the LS guide roller ① into the shaft to attach the LS guide roller.

  Note: Insert the roller completely.
- Attach the LS chassis block assembly to the mechanical chassis. (Refer to 4-10.)

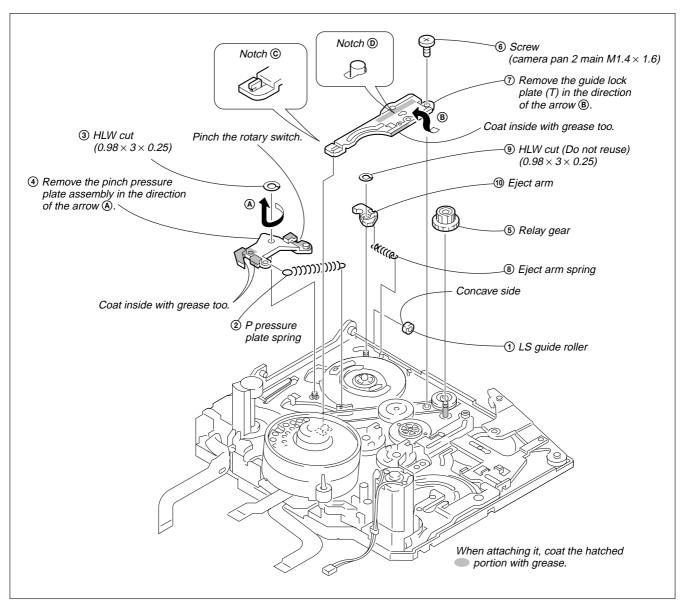


Fig. 4-15.

### 4-16. Rotary Switch, Cam Relay Gear, Change Gear Assembly, Timing Belt

Before replacing the timing belt, remove the guide rail T2 and capstan motor. (Refer to 4-4.)

#### 1. Removal procedure

- 1) Remove the LS chassis block assembly. (Refer to 4-10.)
- Remove the guide lock plate (T), pinch pressure assembly and eject arm. (Refer to 4-15.)
- 3) Remove the cam relay gear ①.
- 4) Remove the timing belt ②.
- 5) Remove the HLW cut  $(0.98 \times 3 \times 0.25)$  ③ and change gear assembly ④.
- 6) Remove the four solderings (and remove the FP-299 flexible wiring board (b).
- 7) Push up the dowel of the rotary switch from the bottom of the mechanism chassis assembly and remove the rotary switch in the direction of the arrow.

#### 2. Attachment procedure

- Insert the dowel of the rotary switch ① into the hole on the mechanism chassis assembly and attach the rotary switch clockwise.
- 2) Align the FP-299 flexible wiring board (a) with the reference hole on the mechanism chassis and solder the flexible wiring board to the rotary switch (a) (at four locations).
- 3) Attach the change gear assembly 4 with the HLC cut  $(0.98 \times 3 \times 0.25)\textcircled{3}$ .
- 4) Attach the timing belt ②.
  - **Note:** There must be a clearance between the rotary switch ⑦ and timing belt ②.
- 5) Attach the cam relay gear ①.
  - The in-phase markings of the rotary switch ⑦, cam relay gear (2) and cam relay gear (1) must be aligned.
- 6) Attach the guide lock plate (T), pinch pressure assembly and eject arm. (Refer to 4-15.)
- Attach the LS chassis block assembly to the mechanical chassis. (Refer to 4-10.)
- 8) Clean the shaft of the capstan motor. (Refer to 2-2.)

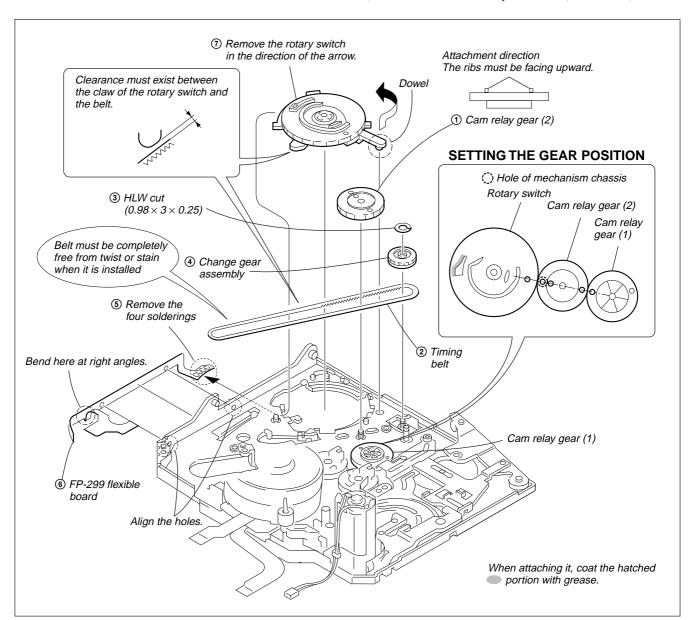


Fig. 4-16.

# 4-17. Guide Gear Assembly, Guide Gear T Assembly, Cam Relay Gear 1, Guide Lock Plate (S)

#### 1. Removal procedure

- 1) Remove the LS chassis block assembly. (Refer to 4-10.)
- 2) Remove the screw (camera pan2 main M1.4  $\times$  1.6) ①.
- 3) Remove the guide lock plate (S) ② in the direction of the arrow (A).
- 4) Remove the two stop rings (E type 1.2) 3.
- 5) Remove the guide gear (S) assembly **(4)** and guide gear (T) assembly **(5)**.
- 6) Remove the HLW cut  $(0.98 \times 3 \times 0.25)$  **6**.
- 7) Remove the cam relay gear (1) ⑦.

#### 2. Attachment procedure

1) Attach the cam relay gear (1) 7 with the HLW cut (0.98 × 3 × 0.25) 6.

**Note:** The in-phase markings of the cam relay gear (1) ⑦, cam gear (2) and cam relay gear must be aligned.

2) Attach the guide gear (T) assembly (§) and guide gear (S) assembly (§) to the shaft in this order and adjust the positions. Then, attach them with the two stop rings (E type 1.2) (§).

**Note1:** The in-phase markings of the GL arm assembly, guide gear (S) (4) and guide gear (T) (5) must be aligned.

**Note2:** The guide gear assembly (S/T) has a different shape respectively. Pay attention to the shapes.

- 3) Fit the guide lock plate (S) ② in the groove on the shaft and insert the portion ③ into the notch. Then, attach the plate with the screw (camera pan2 main M1.4 × 1.6) ①.

  Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
- Attach the LS chassis block assembly to the mechanical chassis. (Refer to 4-10.)

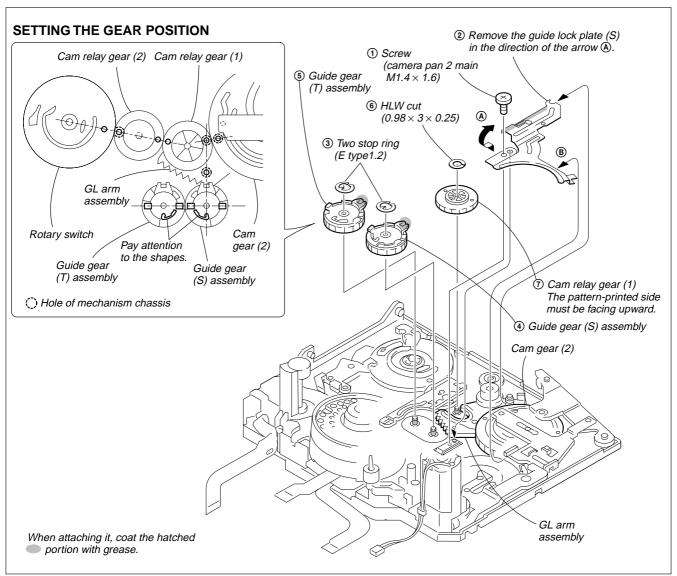


Fig. 4-17.

### 4-18. LD Gear 4, Cam Gear 1, HC Drive Arm

Remove in advance the HCL arm assembly and loading motor assembly beforehand. (Refer to 4-2.)

#### 1. Removal procedure

- 1) Remove the LS chassis block assembly. (Refer to 4-10.)
- 2) Remove the guide lock plate (S). (Refer to 4-17.)
- 3) Remove the cover sheet ① and LD gear (4) ②.
- 4) Remove the T1 limiter arm 3 and cam gear (1) 4.
- 5) Remove the HC drive arm (5) in the direction of the arrow.

#### 2. Attachment procedure

Attach the cam gear (1) 4.

- 1) Attach the HC drive arm **5** under the drive base assembly.
- The dowel of the HC drive arm (§) must be inserted into the groove on the lower side of the cam gear (1) (4).

  The in-phase markings of the cam gear (1) (4), cam gear (2)
  - and cam relay gear (1) must be aligned.
    Attach the LD gear (4) ② with the cover sheet ①.
- 4) Attach the guide plate (S).
- Attach the LS chassis block assembly to the mechanical chassis. (Refer to 4-10.)
- 6) Clean the tape running path. (Refer to 2-2.)

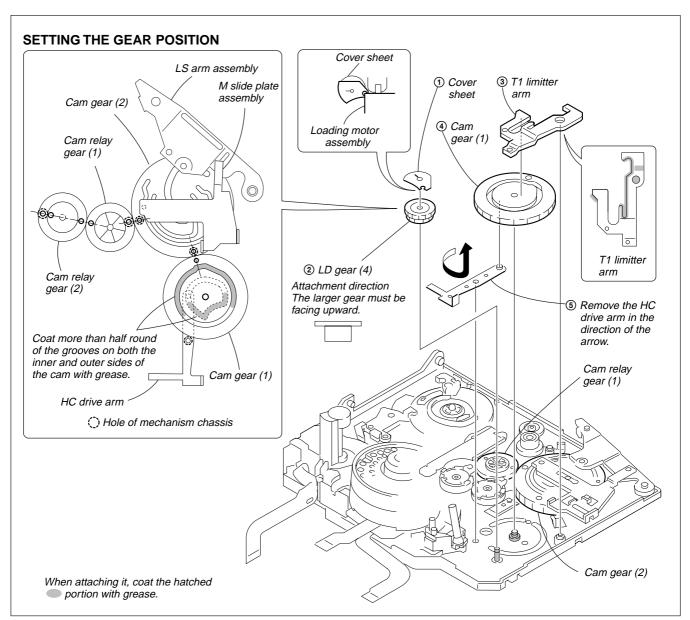


Fig. 4-18.

## 4-19. M Slide Plate Assembly, LS Arm Assembly, Cam Gear 2, GL Arm Assembly

#### 1. Removal procedure

- 1) Remove the LS chassis block assembly. (Refer to 4-10.)
- 2) Remove the guide lock plate (S) (Refer to 4-17.)
- Remove the relay gear ①.
- Remove the M slide plate assembly ② in the direction of the arrow ⑥.
- 5) Remove the LS arm assembly 3 and LS arm roller 4.
- 6) Remove the cam gear (2) **⑤**.
- 7) Remove the GL arm assembly **(6)** from the lower side of the cam relay gear (1) in the direction of the arrow **(B)**.

**Note:** After removing the GL arm assembly, fix the guide gear (S/T) assembly.

#### 2. Attachment procedure

1) Attach the GL arm assembly **(6)** to the shaft so that the GL arm assembly **(6)** is positioned under the cam relay gear (1).

**Note:** The in-phase markings of the guide gear (S/T) assembly and GL arm assembly 6 must be aligned.

2) While aligning the cam gear (2) (3) with the dowel of the GL arm assembly, attach the cam gear (2) (3).

**Note:** The in-phase markings of the cam relay gear (1), cam gear (1) and cam gear (2) ⑤ must be aligned.

- 3) Attach the LS arm roller 4 to the LS arm assembly 3. While aligning them with the cam groove on the cam gear (2) 5, attach them.
- 4) Attach the M slide plate assembly ②.
- 5) Attach the relay gear ①.
- 6) Attach the guide lock plate (S). (Refer to 4-17.)
- Attach the LS chassis block assembly to the mechaical chassis. (Refer to 4-10.)

**Note:** Check that the in-phase marking of each gear is aligned.

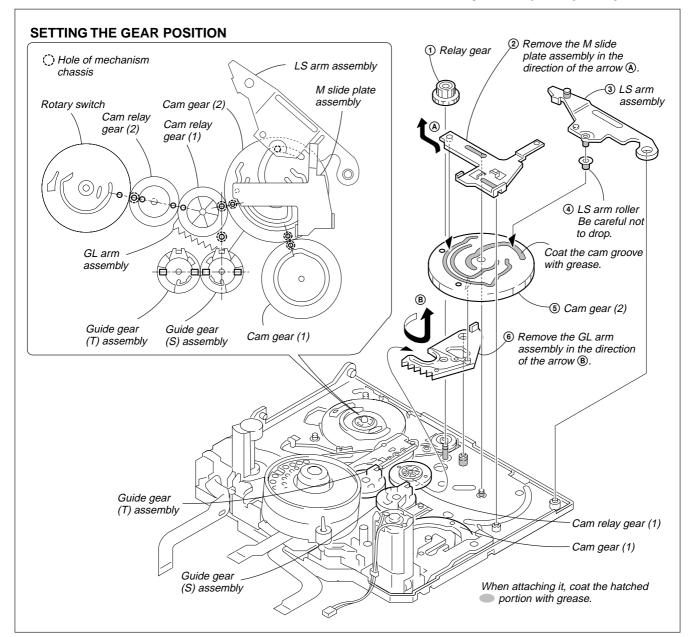


Fig. 4-19.

## 5. Adjustment

# 5-1. Check and Adjustment of TG1 Back-tension Position

#### 1. Check Procedure

- 1) Assemble the mechanism deck into the main unit.
- Thread a normal tape and let the machine enter the PB (or REC) mode.
- 3) Check that the distance between the upper flange of the TG1 guide and the side surface of the LS chassis block is  $12.0 \pm 0.4$  mm (range of fluctuation: 0.5 mm or less).

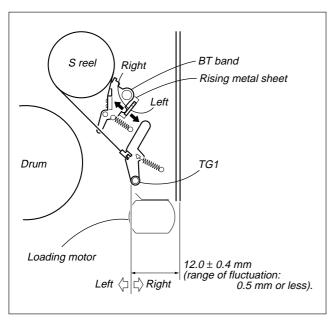


Fig. 5-1.

#### 2. Adjustment Procedure

- 1) Remove the cassette compartment and the blind plate.
- 2) Adjust the position of the TG1 guide by changing the tilt of the rising metal sheet of the LS chassis block assembly.

## 5-2. Check and Adjustment of FWD/RVS Back-tension

#### 1. Check Procedure

 Install the mechanism deck in the main unit and set the take-up torque cassette (Ref. No. J-7).

2) Check the FWD/RVS take-up torque. Check the FWD torque in the PLAY state. Specified value: 7 to 12 gf•cm Check the RVS torque in the RVS state. Specified value: 19.5 to 29.5 gf•cm

#### 2. Adjustment Procedure

1) If the value of the FWD torque is larger than the specifications, change the position where the TG1 arm spring is hooked in the direction of the arrow **(A)**. If the value of the FWD torque is smaller than the specifications, change the position in the direction of the arrow **(B)**.

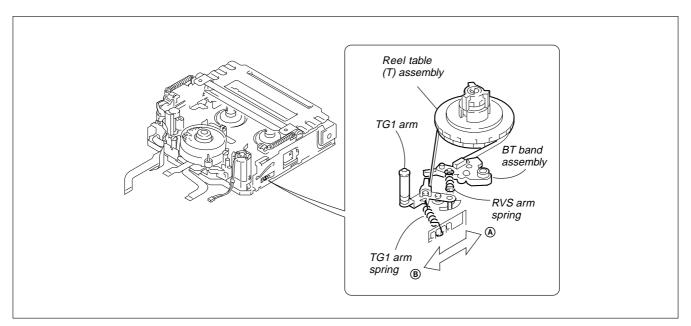


Fig. 5-2.

## 5-3. Capstan Motor Azimuth Position Adjustment

#### 1. Check Procedure

1) Insert the thickness gauge (Ref. No. J-16) of 0.75 mm between the protrusion of the mechanism chassis and the capstan motor, and check the azimuth position.

#### 2. Adjustment Procedure

- 1) Loosen the capstan azimuth adjustment screw (SANG camera pan 2 M1.4  $\times$  4.5), and insert the thickness gauge (0.75 mm)(Ref. No. J-16) between the protrusion of the mechanism chassis and the capstan motor.
- Slowly tighten the capstan azimuth adjustment screw until it slightly contacts the thickness gauge, and remove the thickness gauge.

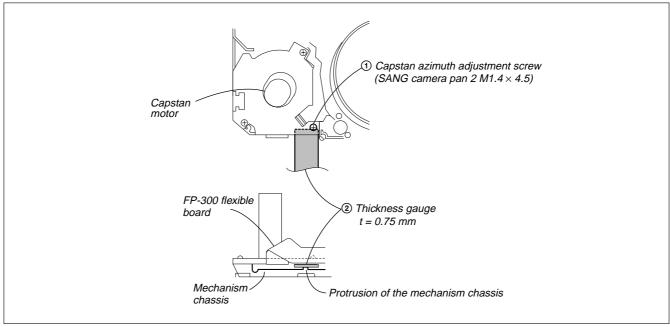


Fig. 5-3.

### 5-4. Tape Path Adjustment

**Purpose:** Adjust the linearity of the head.

#### If the adjustment is not correct:

Noise appears on the top and bottom of the screen when playing back the tape that is recorded by other recorders.

#### 5-4-1. Adjustment Preparation

- Clean the tape running surface (tape guides, drum, capstan shaft, pinch roller).
- Connect the adjustment remote commander to the remote terminal.
- Set the adjustment remote commander to the PATH mode (track shift mode)\* and release the auto tracking.
- 4) Connect an oscilloscope as follows:
  - CH1: Test connector' PB RF terminal
  - External trigger: Test connector' RF SWP terminal
- Playback the tracking alignment tape WR5-1NP (NTSC), WR5-1CP (PAL) (Ref. No. J-6).
- Confirm that the RF waveform on scope is flat both at entrance side and exit side.
  - If the RF waveform is not flat, perform the adjustment by referring to section 4-2.)
- After the adjustment is completed, release the PATH mode (track shift mode)\*.

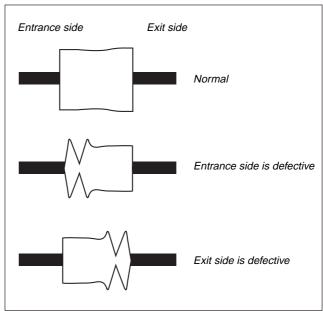


Fig. 5-4.

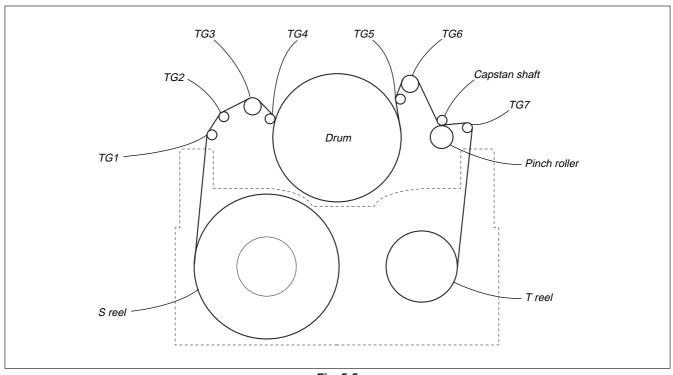


Fig. 5-5.

#### \* Setting and releasing the track shift mode

In case of the DCR-TRV230

#### **Setting**

- 1. Select page: 0, address: 01 and set data: 01.
- 2. Select page: F, address: 22 and set data: 88, and press the PAUSE button.
- 3. Select page: 2, address: 2E and set data: 02. (Note)

#### Releasing

- 1. Select page: 0, address: 01 and set data: 01.
- 2. Select page: F, address: 22 and set data: 80, and press the PAUSE button
- 3. Select page: 2, address: 2E and set data: 00.
- 4. Select page: 0, address: 01 and set data: 00. (Note)

Note: In case of the Digital8 only, set the data of page: 2, address: 2E.

#### 5-4-2. Tracking Adjustment (Refer to Fig. 5-6.)

- Playback the tracking alignment tape WR5-1NP (NTSC), WR5-1CP (PAL) (Ref. No. J-6).
- Adjust the No.3 guide until the envelope at the entrance side waveform becomes flat.
- Adjust the No.6 guide until the envelope at the exit side waveform becomes flat.
- $\rightleftharpoons$  The TG-3/6 zenith adjustment screws do not need to be adjusted.

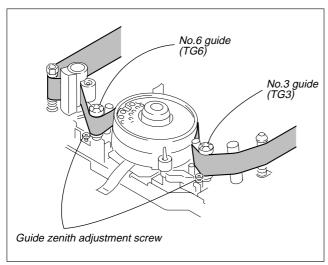


Fig. 5-6.

# 5-4-3. No.7 Guide (TG7) Adjustment (Refer to Fig. 5-7.)

- 1) Playback the tape and set the REV mode.
- 2) Confirm that tape slack does not occur in between the No.6 guide (TG6) ① and capstan ②. If any tape slack occurs, rotate the TG7 nut ④ of the No.7 guide (TG7) ③ to remove the tape slack
- 3) Playback the tape again and confirm that tape slack does not occur between the capstan ② and No.7 guide (TG7) ③. If the tape slack occurs exceeding the specifications (specifications: 0.5 mm or less), rotate the TG7 nut ④ to make the tape slack below the specifications (0.5 mm). When the tape slack between the No.6 guide (TG6) ① and capstan ② is 0.3 mm or less in the REV mode, it means that the adjustment is completed.

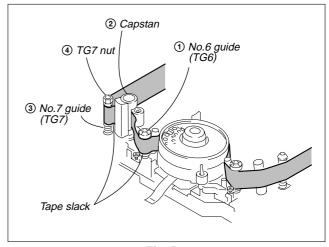


Fig. 5-7.

# 5-4-4. CUE and REV Waveform Check (Refer to Fig. 5-8)

- Playback the tracking alignment tape WR5-1NP (NTSC), WR5-1CP (PAL)(Ref. No. J-6) and enter the REV mode.
   Confirm on an oscilloscope that the pitches between the peaks of the RF waveform are equally spaced for 5 seconds or more.
   If pitches between peaks of the RF waveform are not equal, perform sections "5-4-2 Tracking Adjustment" and "5-4-3 No. 7 Guide (TG7) Adjustment".
- 2) Enter the UCE mode. Confirm on an oscilloscope that the pitches between the peaks of the RF waveform are equally spaced for 5 seconds or more. If pitches between peaks of the RF waveform are not equal, perform section "5-4-2 Tracking Adjustment".

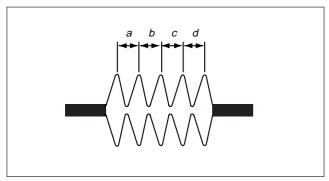


Fig. 5-8.

#### 5-4-5. Check upon Completion of Adjustment

#### 5-4-5-1. Tracking Check

- Playback the tracking alignment tape in the PATH mode. Compare the amplitude of the RF waveform in the AUTO tracking mode and with that in the PATH mode. Confirm that the amplitude of the RF waveform decreases to about 3/4 when the tracking alignment tape is switched from the AUTO tracking mode to the PATH mode. (Refer to Fig. 5-9)
- 2) During step 1, confirm that the minimum amplitude (E  $_{MN}$ ) is 65% or more of the maximum amplitude (E  $_{MAX}$ ) of the RF waveform. (Refer to Fig. 5-10)
- 3) Confirm that the RF waveform does not fluctuate too excessively.(Refer to Fig. 5-11)

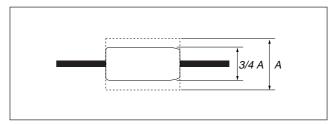


Fig. 5-9.

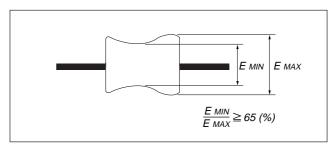


Fig. 5-10.

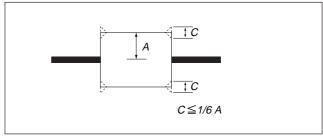


Fig. 5-11.

#### 5-4-5-2. Rise-up Check (Refer to Fig. 5-12)

- 1) Playback the tracking alignment tape WR5-1NP (NTSC), WR5-1CP (PAL)(Ref. No. J-6).
- 2) Turn OFF the Track Shift mode.
- Eject the cassette tape once. Then insert the cassette tape for loading again.
- 4) Confirm that the RF waveform rises up to the flat envelope within 3 seconds after the machine enters the PLAY mode. Check also that the tape slack does not occur at around the pinch roller.
- 5) Run the tape in the CUE/REV and the FF/REW mode. Then playback the tracking alignment tape and confirm the RF waveform rises up to the flat envelope within 3 seconds after the machine enters the PLAY mode. Check also that the tape slack does not occur at around the pinch roller.
- 6) Repeat the above steps 3) to 5) once again for re-check.

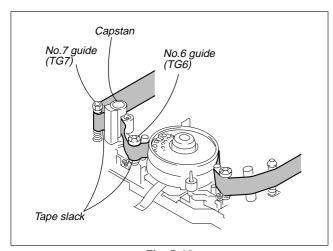


Fig. 5-12.

#### 5-4-5-3. Tape Run Check (Refer to Fig. 5-13)

- 1) Playback the thin video tape such as P6-120MP (NTSC), P6-90MP (PAL). Confirm that tape does not float and the major tape curl of more than 0.3 mm does not occur at the top flange of the No. 3 guide (TG3), at the top flange of the No. 6 guide (TG6) and at both the top and bottom flanges of the No. 7 guide (TG7).
- 2) Confirm that tape does not float and the major tape curl of more than 0.3 mm does not occur at the flanges of the respective guide when the FF button is pressed during PLAY mode to enter the CUE mode and when the REW button is pressed during PLAY mode to enter the REV mode.

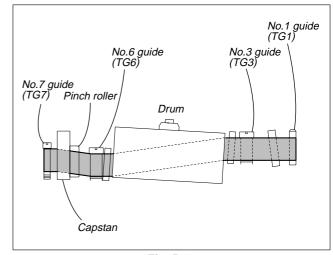
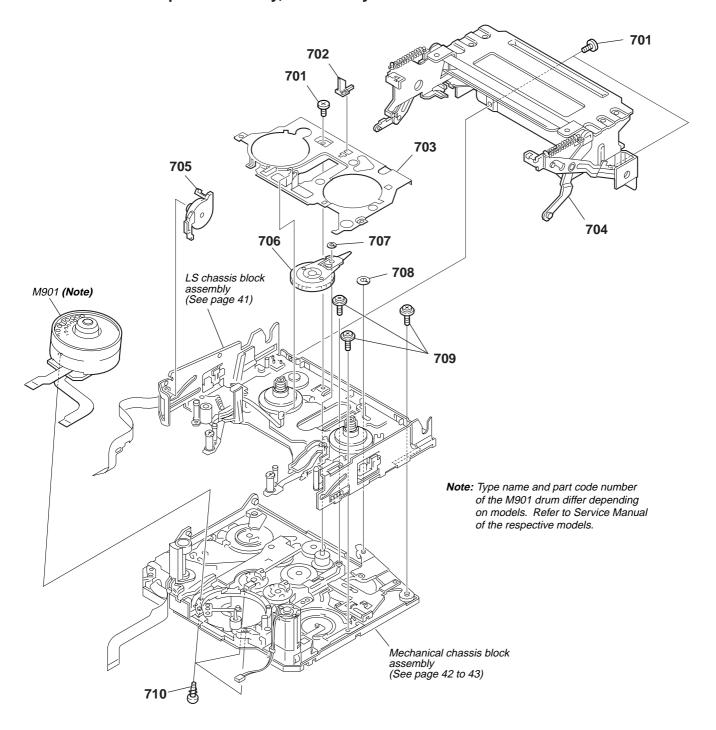


Fig. 5-13.

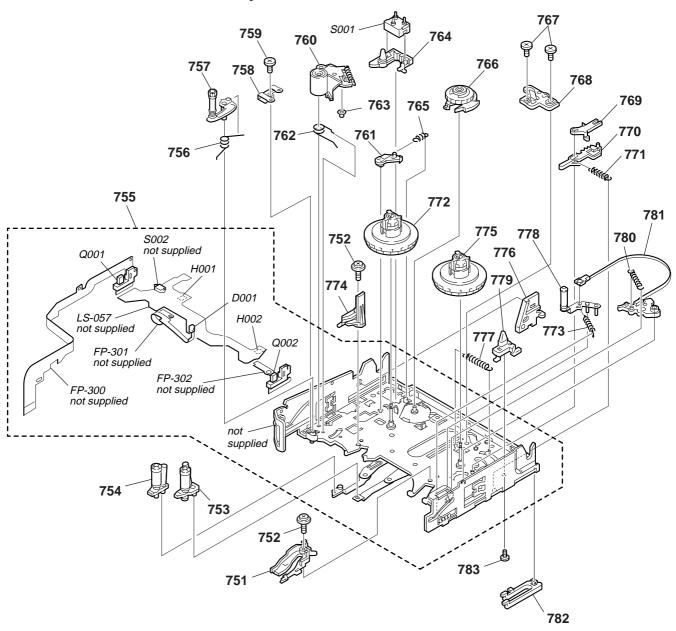
# 6. Exploded Views

# 6-1. Cassette Compartment Assy, Drum Assy



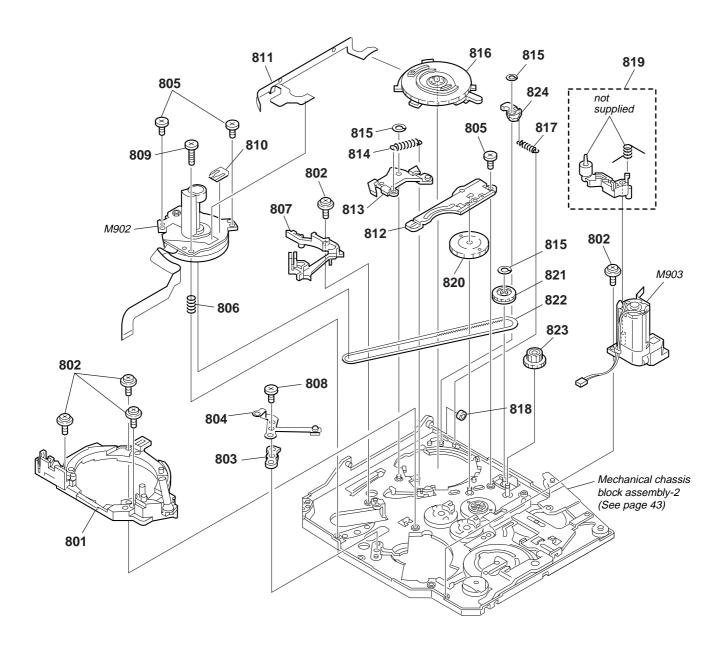
Ref. No.	Part No.	<u>Description</u>	<u>Remarks</u>	Ref. No.	Part No.	<u>Description</u>	<u>Remarks</u>
701 702 703 704 705	3-065-895-01 3-065-896-01 X-3951-298-1	PAN (2 MAIN M1.4X1.6), CAMERA LEVER, REEL RELEASE PLATE, BLIND CASSETTE COMPARTMENT ASSY DAMPER ASSY		707 708 709 710 M901	3-065-935-01 3-947-503-01	CUT (0.98X3X0.13), LUMILER (W) HLC CUT (1.8X4X0.5) SCREW (M1.4) SCREW ASSY, DRUM FITTING DRUM	
706	X-3951-297-1	GEAR ASSY, R DRIVE					

## 6-2. LS Chassis Block Assembly



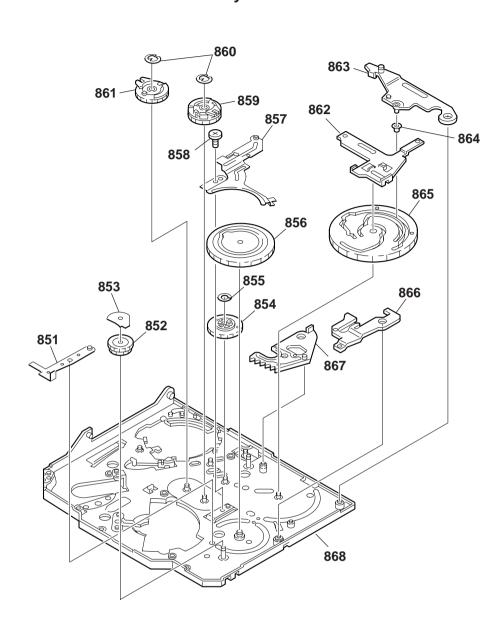
Ref. No.	Part No.	<u>Description</u>	<u>Remarks</u>	Ref. No.	Part No.	<u>Description</u>	<u>Remarks</u>
751	3-065-822-01	RAIL (S), GUIDE		771	3-065-830-01	SPRING, S RATCHET	
752	3-947-503-01	SCREW (M1.4)		772	X-3951-288-1	TABLE (T) ASSY, REEL	
753	A-7096-416-A	BASE (S) BLOCK ASSY, GUIDE		773	3-065-819-01	SPRING, TG1 ARM	
754	A-7096-415-A	BASE (T) BLOCK ASSY, GUIDE		774	3-065-821-01	RAIL (T), GUIDE	
755	A-7096-426-A	CHASSIS ASSY, LS		775	X-3951-289-1	TABLE (S) ASSY, REEL	
756	3-065-802-01	SPRING, TG7 ARM		776	3-065-833-01	GUIDE, LOCK	
757	A-7096-414-A	ARM BLOCK ASSY, TG7		777	3-065-831-01	PLATE (SPR), RE RETURN	
758	3-065-801-01	RETAINER, TG7		778	X-3951-304-1		
759	3-065-932-01	PAN (2 MAIN M1.4X1.6), CAMERA		779	3-065-835-01	GUIDE (S), CASSETTE	
760	X-3951-303-1	ARM ASSY, PINCH		780	3-065-820-01	SPRING, RVS ARM	
761	3-065-823-01	ARM, T RATCHET		781	X-3951-296-1	BAND (ASSY), BT	
762	3-065-794-01	ROAD (SPR), PINCH ARM		782	3-065-836-01	COVER, LS GREASE	
763		ROLLER, P LIM ARM		783	3-067-167-01	SCREW (M1.4X2), CAMERA TAPPING	
764	3-065-834-01	GUIDE (T), CASSETTE		D001	8-719-988-42	DIODE GL453 (TAPE LED)	
765	3-065-824-01	SPRING, T RATCHET		H001	8-719-033-37	ELEMENT, HALL HW-105C (T REEL)	
766	A-7096-417-A	SOFT ASSY, T		H002	8-719-033-37	ELEMENT, HALL HW-105C (S REEL)	
767	7-627-852-38	SCREW, PRECISION +P1.7X1.8 TYPE3	}	Q001	8-729-907-25	PHOTO TRANSISTOR PT4850F (TAPE	TOP)
768	3-065-832-01	PLATE, LS CAM		Q002	8-729-907-25	PHOTO TRANSISTOR PT4850F (TAPE	END)
769	3-065-828-01	ARM, S RATCHET		S001	1-692-614-11	SWITCH, PUSH (3 KEY) (REC PROOF	)
770	3-065-829-01	PLATE, S RATCHET (RE)					

# 6-3. Mechanical Chassis Block Assembly-1



Ref. No.	Part No.	Description	<u>Remarks</u>	Ref. No.	Part No.	Description	<u>Remarks</u>
801	A-7096-422-A	BASE ASSY, DRUM		814	3-065-881-01	SPRING, P PRESSURE PLATE	
802	3-947-503-01	SCREW (M1.4)		815	3-065-934-01	HLW CUT 0.98X3X0.25	
803	3-065-928-01	SPACER, GROUND		816	1-786-096-11	SWITCH, ROTARY	
804	3-065-927-01	GROUND, DRUM		817	3-065-898-01	SPRING, EJECT ARM	
805	3-065-932-01	PAN (2 MAIN M1.4X1.6), CAMERA		818	3-065-870-01	ROLLER, LS GUIDE	
806	3-067-154-01	SPRING, CAPSTAN		819	A-7096-421-A	ARM ASSY, HCL	
807	3-065-931-01	RAIL (T2), GUIDE		820	3-065-918-01	GEAR (2), CAM RELAY	
808	X-3947-398-1	SCREW ASSY, M1.7 PW		821	A-7096-419-A	GEAR ASSY, CHANGE	
809	3-065-933-01	PAN (2 MAIN 1.4X4.5), CAMERA		822	3-065-902-01	BELT, TIMING	
810	1-677-049-11	FP-228 FLEXIBLE BOARD (DEW SENS	OR)	823	3-065-905-01	GEAR, RELAY	
811	1-680-434-11	FP-299 FLEXIBLE BOARD		824	3-065-882-01	ARM, EJECT	
812	3-065-877-01	PLATE (T), GUIDE LOCK		M902	8-835-701-01	MOTOR, DC SCE13A/C-NP (CAPSTAN	)
813	X-3951-301-1	PLATE ASSY, PINCH PRESSURE		M903	A-7096-420-A	MOTOR ASSY, LD (LOADING)	

# 6-4. Mechanical Chassis Block Assembly-2



Ref. No.	Part No.	Description	<u>Remarks</u>	Ref. No.	Part No.	Description	Remarks
851	3-065-920-01	ARM, HC DRIVE		860	7-624-101-04	STOP RING 1.2 (E TYPE)	
852	3-065-913-01	GEAR (4), LD		861	A-7096-412-A	GEAR (T) ASSY, GUIDE	
853	3-065-914-01	SHEET, COVER		862		PLATE ASSY, M SLIDE	
854	3-065-917-01	GEAR (1), CAM RELAY		863	X-3951-305-1	ARM ASSY, LS	
855	3-065-934-01	HLW CUT 0.98X3X0.25		864	3-065-901-01	ROLLER, LS ARM	
856	3-065-915-01	GEAR (1), CAM		865	3-065-916-01	GEAR (2), CAM	
857	3-065-878-01	PLATE (S), GUIDE LOCK		866	3-065-919-01	ARM, T1 LIMITTER	
858	3-065-932-01	PAN (2 MAIN M1.4X1.6), CAMERA		867	X-3951-308-1	ARM ASSY, GL	
859	A-7096-413-A	GEAR (S) ASSY, GUIDE		868	X-3951-300-1	CHASSIS ASSY, MECHANICAL	

# 7. Printed Wiring Boards and Schematic Diagrams

